



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

September 9, 2013

SUBJECT: FAP Route 761(IL 108)  
Project FBD-0761(013)  
Section 101-I-2  
Calhoun and Greene Counties  
Contract No. 76G16  
Item No. 53, September 20, 2013 Letting  
Addendum A

## NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Replaced the Schedule of Prices.
2. Revised sheets 1 and 2 of the Plans.
3. Added sheets 64A, 64B and 64C to the Plans.
4. Replaced the Special Provisions with a revised set.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

John D. Baranzelli, P.E.  
Acting Engineer of Design and Environment

A handwritten signature in cursive script, appearing to read "Ted B. Walschleger P.E." with a small "P.E." to the right.

By: Ted B. Walschleger, P. E.  
Engineer of Project Management

cc: Jeffrey Keirn, Region 5, District 8, Tim Kell; Estimates

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER - 76G16

State Job # - C-98-017-13

County Name - CALHOUN- GREENE-  
 Code - 13 - 61 -  
 District - 8 - 8 -  
 Section Number - 101-I-2

Project Number  
 FBD-0761/013/

Route  
 FAP 761

\* REVISED: SEPTEMBER 06, 2013

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0327359	BARGE FERRY	EACH	1.000				
X0327360	PUSHBOAT	EACH	1.000				
X0327361	PUSHBOAT DELIVERY	EACH	1.000				
X0327362	BARGE FERRY DELIVERY	EACH	1.000				
X0327363	SURPLUS BARGE	EACH	1.000				
X0327364	SURPLUS PUSHBOAT	EACH	2.000				
*DEL X0327603	GROSS TONNAGE CALC	L-SUM	1.000				
Z0076600	TRAINEES	HOUR	1,000.000		0.800		800.000
Z0076604	TRAINEES TPG	HOUR	1,000.000		10.000		10,000.000
67100100	MOBILIZATION	L SUM	1.000				

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## STATE OF ILLINOIS

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### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction, Adopted January 1, 2012", the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the "Supplemental Specifications and Recurring Special Provisions" indicated on the Check Sheet included herein, which apply to and govern the construction of FAP Route 761 (IL 108); Section 101-I-2; Calhoun and Greene Counties; Contract No. 76G16 and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

#### LOCATION OF PROJECT

New vessel construction for Barge Ferry and Pushboat for the Kampsville Ferry East of Kampsville, IL.

#### DESCRIPTION OF PROJECT

This project consists of the construction and delivery of new Barge Ferry and Pushboat to carry passengers and vehicles across the Illinois River at Kampsville, IL. The intent of these provisions, together with the accompanying contract drawings, is to show the design of a new Barge Ferry and Pushboat. This ferry system is owned and operated by the Illinois Department of Transportation (IDOT) Region 5 District 8.

The provision "New Vessel Construction for Barge Ferry and Pushboat" contains information related to the new vessels. Part I sets forth the basic characteristics of the design and general provisions for its construction. Part II sets forth technical requirements of the design and its construction. Part III sets forth basis of payment.

#### PREQUALIFICATION

This project will only be awarded to contractors who are prequalified with the Illinois Department of Transportation in the following major type of construction:

- Marine Construction

**PART 1**

**CONTRACT REQUIREMENTS FOR PASSENGER/VEHICLE BARGE FERRY AND  
PUSHBOAT (KAMPSVILLE FERRY)**

010 INTRODUCTION

011 STATEMENT OF PROJECT

The State of Illinois intends to acquire under one Contract, from the same Builder, a new barge ferry and dedicated pushboat to operate on the Illinois River at Kampsville in West Central Illinois, carrying State FAP Route 761 between Calhoun and Greene counties.

The barge will be of flush deck design, 120 x 35 x 4.75 feet, with rakes and aprons at both ends. It will be unpropelled and will be fitted with an "A-frame" arm on its port side amidships which shall be linked to the pushboat through a universal joint. The pushboat will have pneumatically-actuated latches on each side, aft, and will tow the barge alongside; alternating directions for each crossing.

The locations and construction of the A-frame arm, universal joint, pneumatic latches and hooking angles and the electrical connections on the new pushboat and barge ferry shall be compatible with and allow for interchangeable use with the following existing vessels in the State of Illinois fleet:

MISS ILLINOIS/BARGE 12, located at Kampsville, Illinois  
BELLE OF CALHOUN/BARGE 2000, and  
LIBERTY BELLE/BARGE 2012, located at Brussels, Illinois

(Sample drawings of the Liberty Belle/Barge 2012 A-frame, joint, and latches/hooking angles are provided in the Plans for informational purposes only.)

The twin screw pushboat will be 55 x 18 x 7 feet, with two steering and four flanking rudders, and is intended to operate as the dedicated propulsion unit for the barge ferry. The pushboat and barge will operate on a continuous schedule, 24 hours per day, with a peak operating frequency of twelve (12) crossings per hour. Usage will be over 8,000 hours of operation and as many as 1,000,000 gear shifts and steering movements per year.

## 020 GENERAL ADMINISTRATIVE REQUIREMENTS

### 021 INTENT

These Specifications and the accompanying Contract Drawings describe the equipment, construction, outfit and standards to be incorporated in a 120 x 35 foot non-self-propelled flat deck barge ferry ("the Ferry") and a 55 x 18 foot pushboat ("the Pushboat"), (collectively, "the Vessel(s)"), to be constructed for the ILLINOIS DEPARTMENT OF TRANSPORTATION, Springfield, Illinois (hereinafter called "the State", or "IDOT", or "Owner"); in general compliance with a design by TIMOTHY GRAUL MARINE DESIGN, Sturgeon Bay, Wisconsin. The entity contracted by the State to construct, test and deliver the Vessels shall be referred to herein as "Contractor", "Builder", or "Fabricator". The separate entity contracted by the State to represent IDOT during construction, testing, and delivery shall be referred to herein as the "Owner's Representative".

Builder shall make any modifications, revisions and/or additions to the design and construction of the Vessels which may be required for them to comply with USCG or other applicable statutes, laws, regulations and requirements which are in effect as of the contract date. Such changes, if any, shall be adjudicated under the terms of the Changes clause of the Contract, and Article 23 CHANGES of this Specification.

### 022 DEFINITIONS

0.22.1 Whenever brand names, manufacturers and/or model numbers are specified herein and the terms "or equal" or "or approved equal" do not appear, it is intended that Builder shall furnish that material and no other, for reasons of commonality, unique characteristics or suitability for the application.

0.22.2 When the term "or equal" appears after a citation, the cited brand/make/model is given as an example of the required level of quality, capacity, characteristics or performance.

0.22.3 When the term "or **approved** equal" is used, it is required that the Builder obtain the Owner's specific approval before incorporating any alternate material for the make or model specified.

### 023 CHANGES

0.23.1 A detailed description of any proposed change, including the effect of that change on project cost, weight and delivery date, shall be prepared by the Contractor and submitted to the Owner prior to deviating from the Contract Plans and/or the Specifications. The change shall be approved, signed and returned to **Contractor** before effecting any change.

0.23.2 The Contractor is provided herein with the original plan drawings of the barge ferry and pushboat vessels which were designed by Timothy Graul Marine Design. Any subsequent vessel plan drawing or specification modifications required for bringing the vessels to currency under USCG, EPA, or other governing bodies rules and regulations, including any modifications necessary for conforming to specifications contained herein, shall be the sole responsibility of the Contractor. The Contractor is notified that drawing and/or specification modifications may be required anytime during the USCG/Owner review, approval, certification, and/or acceptance processes. Any Contractor drawing modifications shall first be submitted to the Owner for review and approval. This includes any required submittals to the USCG. Once approved by the Owner, the Contractor will then submit the Owner-approved vessel drawings along with any required specifications and other documents to the USCG for approval. This work will not be paid for separately but shall be included in the contract unit bid price per each of PUSHBOAT and/or BARGE FERRY.

024 REGULATORY APPROVALS AND CERTIFICATIONS

024 REGULATORY APPROVALS AND CERTIFICATIONS

024.1 The Barge Ferry will not be classed by the American Bureau of Shipping, but the 1997 ABS "River Rules" shall be referred to for guidance in design, materials selection, structure and welding.

024.2 The Barge Ferry shall comply with USCG regulations for Small Passenger Vessels, as set forth in Subchapter T (46 CFR 175.100 - 184.710), and with the stability and subdivision regulations of Subchapter S (46 CFR 170 - et seq.) as applicable.

024.3 The Pushboat is an **Uninspected Towing Vessel** and is subject to the USCG regulations contained in Subchapter C **and to the publication United States Coast Guard Requirements for Uninspected Towing Vessels, Change 3, July 2012.** However, these Specifications and the Contract Plans in many cases exceed **those** requirements, and shall be complied with. **Further, Builder is hereby advised of the Notice of Proposed Rulemaking [Docket No. USCG-2006-24412] published in the Federal Register on August 11, 2011 entitled Inspection of Towing Vessels (Subchapter M). The Final Rule has not been published as of July 19, 2013.**

024.4 The applicable sections of the following publications shall be considered as having the same force as if they were included verbatim in these Specifications:

- a. USCG "Rules and Regulations for Small Passenger Vessels" (46 CFR 175.100-184.710)
- b. USCG Stability and Subdivision Regulations (46 CFR Parts 170-171)

- c. Inland Navigational Rules Act of 1980 (Public Law 96-591);  
Comdtinst M16672.2 ("1972 COLREGS")
- d. FCC Regulations

024.5 The following documents shall be provided by the Builder, and those required by law to be displayed shall be mounted in frames in the pilothouse or on the barge.

- Certificate of Inspection
- Certificate of Enrollment
- Tonnage Certificate
- Radio Station License
- Emergency Check-Off List
- Safety Plan

024.6 Builder shall conduct a deadweight survey as set forth in paragraph 026.3 hereof and obtain the USCG Stability Letter.

## 025 ADMEASUREMENT AND DOCUMENTATION

025.1 Builder shall submit the barge's Tonnage Plan, and any required supporting plans and calculations, for determination of the vessel's gross and net tonnage under both the U.S. (Regulatory) and International Convention systems, as required by law. The Builder's attention is directed to the fact that certain structural details as depicted on the barge drawings must be complied with in order to obtain a US gross register (regulatory) tonnage less than 100.

025.2 Builder shall advise when the barge is ready for inspection and verification of dimensions. Upon such verification and receipt of the vessel's tonnage and official number assignments, Builder shall mark them on the vessel as required.

025.3 All costs associated with determination and assignment of the vessel's tonnage, including all fees, shall be paid by the Contractor. The Contractor is advised to obtain a quotation from an authorized Classification Society (ABS or DNV) for admeasurement.

025.4 Both the barge and the pushboat shall be enrolled as United States vessels (e.g., "documented"). Builder shall provide all services required to enroll the vessels, to obtain and mark their official numbers as required by law and to provide the vessels' Certificates of Enrollment.



## 026 SUPERVISION/INSPECTION

026.1 The construction of the barge only shall be under the inspection of the cognizant Marine Inspection Office of the U.S. Coast Guard. Access to work shall be afforded to Coast Guard inspectors at all reasonable times, and Builder shall notify the Coast Guard of salient inspection points as mutually agreed.

026.2 The Owner's Representative is hereby designated as the Owner's authorized representative in all matters related to the construction of both vessels, except for authorizing change orders or modifying the vessel construction Contract.

026.3 When the barge is substantially complete and all significant weights are on board, the Contractor will conduct a deadweight survey, witnessed by the Owner's Representative and the USCG. Results of the deadweight survey will be used by the Contractor to prepare final stability calculations which he/she will submit to the USCG in order that the vessel's Stability Letter may be issued.

## 072 WORKMANSHIP

### 072.1 Fitting

Proper shipbuilding techniques and practices shall be employed in all areas. Careful attention shall be given to alignment of opposing members across bulkheads. There shall be no hard spots or sharp-cornered notches (all cuts in primary structure shall have radius corners). Concentrated loads shall be dispersed by means of doublers, inserts, brackets and gussets. Limbers for thorough drainage shall be provided throughout all internal structure and on deck. Overhead structure shall also be limbered to allow unrestricted air flow to vents.

### 072.2 Tightness

All shell seams and tank boundaries shall be tested for tightness equivalent to USCG standards. Radiographic inspection of welds is not contemplated, but may be used by Builder at his option.

### 072.3 Piping

Piping installations shall be to the highest commercial standard, equal to Coast Guard regulations. Piping shall be adequately supported and protected against damage by or injury to passengers, crew and vehicles. Piping shall be routed to avoid access openings and manholes and, in general, shall be kept as close to bulkheads, decks and primary structure as possible.

## 073 ACCESS

Both Owner and Naval Architect shall have unrestricted access to the vessel and to all shops and areas where work connected with the vessel is being carried out, during all normal working hours.

## 074 WELDING

074.1 Welding shall be to the highest commercial standard. Welders employed in construction of the vessel shall be currently certified by USCG, AWS, ABS or other acceptable recognized agency.

074.2 Builder shall develop a welding procedure and certify all welders used on the construction of the ferry to the satisfaction of the Coast Guard.

074.3 Fits shall be close; welding gaps shall be uniform; edge preparation shall be neat; and parts shall be securely tacked in position before welding is done.

074.4 All welding shall be uniform, smooth and tight; free from undercuts, porosity, slag and gas inclusions. A sequence of welding which will result in the minimum of distortion and locked-in stress shall be employed. All flush butts and seams shall be back chipped or air-arc gouged to sound metal from the closing side before welding.

## 075 THREADED FASTENERS

075.1 Threaded fasteners shall in general be SAE grade 5 steel. Fasteners exposed to the weather or under water shall be of type 316 stainless steel, or bronze.

075.2 Bolts used to mount engines, reduction gears and other machinery to foundations shall be SAE Grade 8. Coupling bolts, and all bolts used in assembling and mounting steering gear, latch mechanisms and barge/pushboat hitch components shall be Grade 8.

## 078 MATERIALS

078.1 All structural steel shall have chemical and physical properties equivalent to ABS grade "A" or ASTM-A36: a minimum tensile strength of 58,000 to 71,000 pounds per square inch, elongation of 24 percent in two inches, and a minimum yield point of 34,000 pounds per square inch. Mill certificates shall be provided.

078.2 Other materials shall have properties as specified herein or in the applicable references.

## 085 DRAWINGS

085.1 Contract Drawings are drawings forming part of the Specifications which illustrate design features of the vessel from which no departure is permitted unless such departure is specifically approved. The Contract Drawings for each vessel shall be as listed in Section 085 of the respective Specifications.

085.2 Construction Drawings are drawings which may be necessary for construction of the vessel, and are prepared by the Builder in compliance with these Specifications.

085.4 Vendor Drawings are illustrations, catalog cuts or similar documents containing equipment specifications and installation dimensions and related information.

## 086 PLANS AND PLAN APPROVAL

086.1 Contractor shall submit the contract plans of the barge to the USCG for approval as soon as a contract for construction has been signed.

083.2 In the event changes must be made to the drawings after a construction contract has been signed, any charges or credits resulting therefrom shall be adjudicated under the "Changes" clause of the Contract. The Contractor shall be responsible for providing drawings to the USCG Marine Safety Center for review and approval and shall provide stamped copies of all Approved drawings to the local OCMI

086.3 Any shop drawings or plans produced by the Builder shall be submitted to and approved by the Owner, and USCG, if required, before they are employed in construction.

## 087 INSTRUCTION BOOKS

087.1 In order to assist the Owner in obtaining replacement or spare parts, service and help in the event of breakdown, Builder shall furnish to Owner copies of all purchase orders for mechanical and electrical equipment purchased for and incorporated in the vessels (with the exception of bulk material items, shop consumables and services). Purchase order copies shall be made as they are issued and collected in a common binder, indexed by vendor name and brand or trade name.

087.2 The Builder shall consolidate and bind, grouped according to sections as they appear in these Specifications, two copies of all operation, service, parts and/or technical manuals provided by the manufacturers of all equipment incorporated in the vessels.

087.3 The Builder shall also prepare instructions for the operation, startup, shutdown, layup and periodic maintenance of all systems and components incorporated in the vessels and peculiar to them. An example of such instructions is the pushboat's steering hydraulic system. Any other systems which are unique to the vessels and require specific knowledge in order to operate correctly shall be addressed. These instructions will include a list of recommended fluids for each system; fluid capacities; procedures for draining and filling, and any necessary emergency or precautionary procedures to be employed in the operation of the system.

## 091 INSPECTION

The Builder shall continuously inspect all workmanship and material used in the construction of the Vessels to assure that the Specifications are complied with in all respects and that the Contract Plans are followed. Owner and/or his authorized representative shall have full inspection authority at all times during construction, and shall be notified of all salient points with sufficient advance notice to permit them to observe.

## 092 ON-BOARD TESTS

092.1 Throughout the construction and trial period, the Contractor shall assist the USCG inspectors and the Owner (or Owner's Representative) in monitoring and inspecting the work in progress and in testing, by providing safe and well lit access to all parts of the Ferry.

092.2 After completion of the vessels and prior to acceptance trials, all systems shall be tested to assure and demonstrate compliance with these specifications, and proper operation. Tests shall be witnessed by Owner and/or his representative as required. All tests conducted by Builder shall be documented and a collection of written and signed test reports furnished to Owner at delivery.

092.3 After start-up of the main engines and certification by the engine manufacturer's representative that they have been installed in accordance with all recommendations, and upon satisfactory completion of dock trials, an underway trial shall be made to demonstrate that all associated equipment is fully operational and in satisfactory adjustment.

## 094 TRIALS

094.1 All vessel systems and components shall be proven by tests and trials to be adequate for the service intended and in full compliance with the Specifications and the Contract Drawings. Costs of all test and trials shall be borne by the Builder. The Contractor shall also provide the necessary personnel to conduct the tests and trials.

094.2 The Contractor shall compile a **Test Program** for all tests to be done as part of the dockside trials and the underway trials. The proposed program and all test procedures shall be submitted to the Owner (or Owner's Representative) at least three (3) weeks prior to the start of each testing cycle. The procedure shall be approved by the Owner (or Owner's Representative) prior to commencement of testing. The Contractor shall notify the USCG inspector and the Owner (or Owner's Representative) in writing at least two (2) weeks prior to the time of each test which is to be witnessed by these parties as part of the formal approval process.

094.3 After installation and before the underway trials, **Dockside Trials** shall be conducted for all machinery, and for all mechanical, piping and electrical systems. It shall be the responsibility of the Contractor to assure that the temporary power supplied to the Pushboat and Barge Ferry's main distribution panel, for testing, is at 240/120 VAC, 1-phase, and 60 Hertz.

094.4 **Builder's Trials**, in which the boat is navigated away from the construction facility prior to the formal underway trials, will be conducted by the Contractor. In the event that the Contractor chooses to conduct informal builder's trials, the Contractor must afford the Owner (or Owner's Representative) an opportunity to witness the trials and these parties must be given at least two (2) week's advance notice prior to each builder's trial.

094.5 After successful completion of Dockside Testing and optional Builder's Trials, the Contractor will conduct *Preliminary* Phase I and Phase II **Underway Trials** for the Pushboat and Barge Ferry prior to delivery for the purpose of testing the Pushboat and Barge Ferry as a whole and the performance of individual systems while underway. *Final Acceptance* Phase I and Phase II **Underway Trials** must be conducted at the Kampsville Ferry Site in the presence of the Owner and/or Owner's Representative and these parties must be given at least three (3) week's advance notice prior to each Underway Trials. The adequacy of all vessel systems and components shall be proven by the underway trial simulating actual operating conditions; including engine/gear controls; cooling, fuel and exhaust systems; fire/bilge pumping systems; steering system; vehicle barrier and latch pneumatic system, and electrical systems. The barge shall be loaded to a draft of approximately 27 inches. Adequacy of the running lights, interior and exterior lighting systems shall be demonstrated. Any abnormal noise or vibration shall be noted and eliminated and any system or component failures or deficiencies shall be corrected at Builder's expense prior to delivery. Additionally these tests are to demonstrate that the Barge Ferry operates and maneuvers in the environment it was intended, performing its mission role docking and undocking successfully. It will be the responsibility of the Contractor to schedule a time mutually agreeable between the contractor and the owner and/or Owner's Representative. The Underway Trials will be conducted in two phases during a 2-4 hour underway test and evaluation period. During the first phase the Pushboat will be demonstrated for performance and adequacy for underway operation. During the second phase the Pushboat and Barge Ferry will be demonstrated for performance and adequacy for Ferry operations and meets the Contract specifications. The Contractor shall provide an Underway Acceptance Trial Event Schedule and Test Agenda which includes all Final Acceptance Underway Tests that will be conducted, data forms and schedule to IDOT for approval in advance of the trials. The Contractor will coordinate the trials and arrange for data takers, Owner (or Owner's Representative) and USCG OCMI to witness Ferry operations to support Initial COI in accordance with 46 CFR Subchapter T Part 176, document design data and verify acceptable Ferry performance. In addition, the Contractor will coordinate to have all applicable manufacturers' representatives present for testing machinery and components during the Final Acceptance Underway Trials. The cost for attendance by manufacturers' representatives shall be included in the cost for the contract bid items. Operations and design verification testing that needs to be performed while the vessel is underway shall included the following:

**Phase 1 Pushboat Underway Trials: (approximately 2 hours)**

- Speed, power, propulsion controls, fuel consumption measurement
- Achieve full power ahead endurance test
- Achieve astern full power, crash stop, endurance test
- Ahead and astern steering and maneuverability tests (run tests with port steering pump only, run tests again with the starboard steering pump only)
- Rudder swing from 40 degrees to 40 degrees in either direction within 8 seconds while at idle
- Diesel generator endurance validation

- Communications equipment and navigation validation
- Main engine, reduction gear, propulsion shaft seals, couplings and stern tube bearings operation
- Fire/bilge pump clutch operation at full power and reduced power

**Phase 2 Ferry Underway Trials: (approximately 2 hours)**

- Speed-power measurement , fuel consumption
- Achieve full power ahead endurance test
- Achieve astern full power; crash stop; endurance test
- Ahead and astern steering and maneuverability tests
- Diesel generator endurance and electrical distribution system validation
- Communications equipment and navigation validation
- Tow connection and latch operation validation
- Vehicle ramp/aafety barrier operation during ferry landing demonstration
- Barge Ferry fire/bilge pump demonstration
- Navigation lights operation validations
- Release and recovery of barge ferry anchor

094.6 Underway trials include testing of all machinery, and all mechanical, piping and electrical systems. Conduct noise level measurements in various locations on the open deck and also inside of the pilothouse during the Phase 2 Underway trials.

094.7 An endurance run of at least two hours ahead and 15 minutes astern duration shall be conducted for Pushboat Phase 1 test and 1 hour ahead and 10 minutes astern for the Phase 2 combination Ferry Underway Trial. The total time expected to conduct the Acceptance Underway Trials is approximately 4 hours.

094.8 The Pushboat and Barge Ferry shall be subjected to crash stops from full speed in each direction to full power in the opposite direction. The time taken to bring the ferry to a stop shall be recorded. Crash stops from ahead shall be conducted by reversing the rotation of the propellers while proceeding at full speed ahead with the Pushboat aligned and latched to the Ferry barge. Additional crash stops shall be conducted from full power astern to full speed ahead, also with the Pushboat aligned and latched to the Ferry barge.

094.9 The ability of the Pushboat to "about-face" shall be demonstrated by unlatching, pivoting and relatching the pushboat to the barge at least eight (8) times in rapid succession. These maneuvers shall be controlled completely from the pilothouse.

094.10 During the trials and subsequent guarantee period, all machinery shall perform as specified without malfunction, overheating, or excessive vibration. If any mechanical or electrical equipment is found to be defective, it shall be corrected and trials shall be repeated to the satisfaction of the USCG inspector and Owner (or Owner's Representative) to demonstrate that its operation is in compliance with the Ferry performance that is specified.

094.11 After successful completion of all trials and tests, and upon delivery at destination the vessels shall be thoroughly cleaned. Any damaged or marred paint shall be touched up, all decks and bulkheads shall be washed down and glass shall be cleaned. After a final "walk-through" inspection and determination that all trial items have been accomplished; all spare parts and software items are on board or accounted for and the vessel is in good order, the Owner will take delivery of and make final payment for the vessel as called for in the Contract.

094.12 **Stability Calculations, AND Deadweight Survey. See ¶26.3.**

095 MATERIAL AND WORKMANSHIP; WARRANTY

095.1 The Builder warrants and guarantees all Work against defects in materials, equipment or workmanship for one (1) year from the date the Vessel is accepted by Owner.

095.2 Upon receipt of written notice from Owner of the discovery of any defects, the Builder shall remedy the defects at its expense and replace any vessel parts damaged thereby and occurring within the warranty and guarantee period.

095.3 In case of Work performed by Subcontractors and where guarantees are required, the Builder shall secure warranties from said Subcontractors addressed to and in favor of Owner; deliver copies of same to Owner upon completion of the vessel, and guarantee and assume full responsibility for the full period of said warranties. Delivery of said guarantees shall not relieve the Builder from any obligations assumed under any other provisions of the Contract. All warranty/guarantee work will be through the Builder: Owner will not work directly with any subcontractors.

095.4 Over and above the warranty of para 0.95.1 above, Builder shall warrant the integrity of the paint system of barge and towboat for a period of five (5) years from date of acceptance.

095.5 Neither the final payment nor any provision of the Contract documents shall relieve the Builder of responsibility for faulty materials or workmanship. If the Builder, after notice, fails to proceed promptly to comply with the terms of the warranty and guarantee, Owner may have the defects corrected and the Builder and its surety shall be liable for all expense incurred.

**PART II**

**SPECIFICATIONS FOR 55 X 18 FOOT FERRY PUSHBOAT (KAMPSVILLE FERRY)**

**GROUP 0 GENERAL DESCRIPTION AND INFORMATION**

070 GENERAL REQUIREMENTS FOR DESIGN AND CONSTRUCTION

070.1 Characteristics

The pushboat will have the following particulars:

Length, overall	55'-0"
Beam, molded	18'-0"
Depth amidships, molded	7'-0"
Draft at design waterline (projection)	4'-2"
Displacement, Light	about 117,000 pounds
Fuel capacity	approximately 3,200 gallons
Displacement, full load	about 141,000 pounds
Propulsion engines	Two (2) John Deere 6090AFM75 Engines: <b>AT LEAST 285 SHP @ 2100 RPM</b>
Marine gears	Twin Disc MG 5091; TO BE DETERMINED
Propellers	44 inch diameter, 4-blade
Generator Set	20 kW/120/240 V/1-phase
Certification	Uninspected Towing Vessel

081 MAINTENANCE (Section Reserved)

085 ENGINEERING DRAWINGS

085.1 Plans Forming Part of the Specifications

The following Contract Drawings are considered to be part of and shall have the same effect as these Specifications:

111-101	SHELL AND DECK PLATING AND FRAMING
116-101	LONGITUDINAL STRUCTURE
117-101	TRANSVERSE STRUCTURE - FRAMES 0-14
117-102	TRANSVERSE STRUCTURE - FRAMES 15-27
151-101	DECKHOUSE AND PILOTHOUSE CONSTRUCTION
233-101	MACHINERY ARRANGEMENT
243-101	SHAFTS, BEARINGS AND RUNNING GEAR
252-102	MACHINERY CONTROL SYSTEM
256-101	MACHINERY PIPING SYSTEMS
311-101	GENSET INSTALLATION
321-101	AC ELECTRICAL ONE-LINE DIAGRAM



321-102	DC ELECTRICAL ONE-LINE DIAGRAM
422-101	RUNNING LIGHTS
400-101	COMMUNICATION SYSTEMS
506-101	HULL AND TANK SOUNDS, VENTS AND FILLS
512-101	VENTILATING, HEATING AND DEFROSTING
541-101	HULL PIPING SYSTEMS (BILGE AND FUEL)
551-101	COMPRESSED AIR SYSTEM
556-101	HYDRAULIC SYSTEM
561-101	STEERING SYSTEM - CONTROL AND ACTUATION
562-101	RUDDERS, TILLERS AND TUBES
611-101	DECK FITTINGS, RAILS AND LADDERS
641-101	JOINERWORK AND INTERIOR
801-101	GENERAL ARRANGEMENT
839-101	HULL LINES AND OFFSETS

085.2 Items or features appearing or called out in one document shall be interpreted as being in all relevant documents. In case of conflict, the Owner shall be consulted for resolution.

#### 086 PLANS AND PLAN APPROVAL

Any shop drawings, plans or sketches produced by the Builder shall be submitted to and approved for the Owner by the Owner's Representative, and USCG if required, before they are employed in construction.

### **GROUP 1** HULL STRUCTURE

#### 100 HULL STRUCTURE

The vessel shall be built on a transverse system of framing with longitudinal girders and bulkheads, as shown on the drawings. There shall be no sharp corners or ragged edges anywhere. Limber and drain holes shall be provided throughout, except for the area between the engine girders in way of stuffing boxes, which shall be welded oiltight to confine any leakage and allow it to be pumped overboard by automatic bilge pumps (see 529.1).

#### 110 SHELL AND SUPPORTING STRUCTURE

##### 111 Shell Plating

111.1 Side shell, bottom and transom plating shall be 3/8 inch plate. Headlog and 18 inch radius corners shall be 1/2 inch plate.

111.2 Plating shall be fair and smooth, and butts and seams shall be carefully fitted and properly welded to minimize both local distortion and overall lifting of the ends.

111.3 Butt and seam welds shall be made before the shell plating is welded to internal structure. The sequence of welding shall be from centerline amidships out to sides and ends, symmetrically. All shell and deck plate butts and seams shall be welded continuously inside and outside. Watertight bulkheads shall be continuously welded to shell plate on one side; generally the side against which water could stand. Engine girders shall be continuously welded to the shell below engines and in way of shaft logs as shown on the plans to confine leakage. Longitudinal and transverse structure and stiffeners in the stern between frame 24 and the transom shall be welded to bottom plating continuously on both sides.

#### 114 Shell Appendages

114.1 Shaft struts shall penetrate the bottom plating and be welded continuously on both sides to longitudinal and transverse bulkheads at deep web frame 24.

114.2 Pockets for the shaft glands shall be welded into the bottom at the aft end of the engine room at frame 20 / 21-1/2.

114.3 Recesses for main engine and the generator set keel coolers shall be provided on each side of the hull as shown on the drawings.

114.4 Connections to keel coolers shall be made in cofferdams, which shall have vent and fill plugs provided to facilitate purging the system of air.

114.5 Guards fabricated from galvanized subway grating shall be fitted over keel coolers. Guards shall be bolted in place using stainless steel hex-head bolts. Guards shall be flush with side shell.

#### 115 Stanchions

Structural stanchions shall be installed as shown on the drawings.

#### 116 Longitudinal Framing

116.1 Longitudinal engine girders shall be 5/16 inch plate webs with 1/2 x 4 inch flat bar flanges.

116.2 Keel shall be 3/4 x 6 inch flat bar.

116.3 Bilge knuckles shall be 3/8 inch plate, rolled to a 12 inch radius. Knuckles may be lapped or butted to side and bottom plating at Builder's option.

#### 117 Transverse Framing

117.1 Transverse bottom frames shall be 6 x 4 x 3/8 inch angle, 24 inches on centers, or cut from plate, as shown on the plans.

117.2 Transverse side frames shall be 5 x 3 x 5/16 inch angle.

## 120 HULL STRUCTURAL BULKHEADS

### 121 Longitudinal Structural Bulkheads

121.1 Non-tight bulkheads of 1/4 inch hot rolled steel plate shall extend from the aft engine room bulkhead to the transom as on the plans. Lightening holes in the bulkheads shall be no closer to the shell than 6 inches.

121.2 The fuel tank will be formed by longitudinal bulkheads between transverse bulkheads 7 and 12. Tank bulkheads will be in line with the outboard engine girders and will be 1/4 inch plate with 3 x 3 x 1/4 inch angle stiffeners.

121.3 Nontight longitudinal bulkheads shall be constructed in the forward void between the headlog and bulkhead 7.

### 122 Transverse Structural Bulkheads

122.1 Transverse watertight bulkheads of 1/4 inch plate with 3 x 3 x 1/4 inch angle stiffeners on 18 inch centers shall be located at frames 7, 12 and 21.

122.2 A nontight transverse bulkhead shall be constructed in the aft void at frame 24, intercostal to longitudinal bulkheads.

## 130 HULL DECKS

### 131 Main Deck

131.1 Main deck shall be 1/4 inch mild steel plate welded flush. Transverse deck beams shall be 4 x 4 x 1/4 inch angles, 24 inches on centers; supported by longitudinal bulkheads and girders.

131.2 Main deck on each side of engine room shall be supported by 1/4 inch flanged plate brackets and a 1/4 x 6 inch coaming.

## 140 HULL PLATFORMS AND FLATS

Engine room walking flats shall be 1/4 inch aluminum safety tread plate, secured to steel angle frames at the height shown on the plans. Hinged access panels shall be provided to reach all fittings, valves, sumps, connections or junction boxes below the sole.

## 150 DECKHOUSE STRUCTURE

### 151 First Deckhouse Level

151.1 The main deckhouse shall be constructed of 3/16 inch hot rolled sheet with 3 x 2 x 3/16 inch angle stiffeners on nominal 16 inch centers. The forward part of the deckhouse shall be arranged as a crew duty room and for storage of spares and tools, while the after part will provide light and air to the machinery space. The forward and after sections shall be divided by a bulkhead at station 13. Access to the deck room shall be through doors on each side. Access to the engine space shall be through a door on the aft bulkhead, and an escape door on the port side.

151.2 Top of main deckhouse will be 3/16 inch sheet with 3 x 2 x 3/16 inch angle beams on 16 inch centers. Engine removal hatches with 7'-4" x 42 inch clear openings and raised covers, gasketed and secured from below, shall be fitted as shown. The top shall be bounded by a 1/4 x 6 inch flat bar fascia which is to form a 2 inch coaming all around the top. Drain pipes shall be provided aft.

151.3 A stairway shall be recessed in the aft bulkhead/top, as shown.

### 152 Pilothouse Level

152.1 Pilothouse shall be fabricated from 3/16 inch sheet and 3 x 2 x 3/16 inch angle stiffeners as shown on the drawings. A 54 inch high void space shall be provided below the pilothouse sole, to accommodate miscellaneous equipment. Access to the void space shall be through a hinged, raised-coaming door on the aft bulkhead.

152.2 Pilothouse sole and aft flat shall be 3/16 inch sheet, on 3 x 2 x 3/16 inch angle beams. The catwalk forward and on each side of pilothouse shall be open-pattern grating with a non-slip safety tread; "Grip-Strut" or equal.

152.3 Inclined ladder to pilothouse shall be constructed over a plenum for the engine room exhaust fan.

152.4 Pilothouse overhead shall be 3/16 inch sheet, and visors with rain coamings and downspouts shall be provided as shown on the drawings.

## 160 SPECIAL STRUCTURES

### 161 Structural Weldments

An A-frame yoke shall be fabricated from plate and structural 6 inch square tubing to connect the pushboat to the barge. The assembly shall be adequate to transfer all propulsion and steering forces to the barge, and shall be built and welded in place as shown on drawing 611-201.

167 Hull Structural Closures

167.1 Four flush watertight hatches, 18 inches clear opening and operable from above and below, shall be fitted in the main deck for access to bow, port, starboard and stern voids. Hatches shall have galvanized steel rings welded flush in the deck and shall be Nabrico model DF-430-18HGAL or equal. Covers shall be provided with retaining chains to prevent loss overboard.

167.2 Two Nabrico DF-503 or equal flush bolted oiltight manholes, 15 x 23 inches clear opening, shall be provided in the main deck at frames 8-1/2 starboard and 11-1/2 port for access to the fuel tank.

170 MASTS, KINGPOSTS AND SERVICE PLATFORMS

179 Service Platforms

A raised platform with hinged covers of 1/4 inch aluminum tread plate shall be installed on the stern over the steering gear. The covers shall protect the steering gear from weather damage while affording easy access for maintenance and repair. Hinges shall be stainless steel, through-bolted to aluminum covers and welded to the steel boundary structure, which shall be fitted with limbers to allow drainage of rain and spray.

180 FOUNDATIONS

182 Propulsion Plant Foundations

The main engines shall be mounted on structural foundations which will properly support and position the engines in the hull. The foundations will be attached to the longitudinal engine girders, and shall be constructed as shown on the drawings.

183 Electrical Foundations

183.1 Foundations shall be provided for genset, panelboards, lighting fixtures, switches, motor controllers and wireways. Foundations shall be arranged and located to afford best access to equipment.

183.2 Foundations for two searchlights shall be installed in the pilothouse top as shown. Bases shall be elevated at least 1 inch above the pilothouse top.

184 Command and Surveillance Foundations

Navigation lights shall be mounted on light shields on top of pilothouse and to masts on main cabin and pilothouse top as indicated on drawing 422-101.

185 Auxiliary Machinery Foundations

Foundations shall be provided for all pumps and equipment. Dowel pins shall be fitted where appropriate to facilitate replacement of items removed for service.

186 Outfit and Furnishings Foundations

186.1 Headers or brackets shall be installed beneath all kevels, as indicated on the plans, to distribute loads to hull structure.

186.2 Towing hitch yoke shall be securely welded to the headlog as indicated on drawing 611-201.

190 SPECIAL PURPOSE SYSTEMS

192 Compartment Testing

192.1 Bow, stern and tank voids shall be proven watertight by applying 2 psi air pressure and checking all seams and boundaries with soap solution.

192.2 The fuel tank shall be tested for tightness by filling it with water into a standpipe 11 (eleven) feet above the top of the tank. All seams and boundaries shall be inspected for tightness. Any permanent deformations greater than 1/4 inch shall be reinforced.

**GROUP 2 PROPULSION PLANT**

230 PROPULSION UNITS

233 Propulsion Internal Combustion Engines

233.1 Two John Deere 6090AFM75 Engines, each rated at least 285 SHP at not over 2100 RPM for continuous workboat service, shall be provided and installed as shown on the plans.

233.2 Engines shall be provided as dealer-prepared and warranted marine propulsion units; new and unused; with all current-production features and upgrades. Engines shall have the following standard and optional equipment, and shall be certified by their manufacturer as being in full compliance with all provisions of MARPOL 73/78 Annex VI. and shall be EPA Tier II certified.

- Air inlet housing with silencer and filter.
- Alternator: 12 VDC, 60 amp.
- Cooling System: Keel cooling with circulating pump, expansion tank and thermostat.
- Engine Mounts: Solid mounts, front and rear engine mounts and separate marine gear mounts.
- Exhaust System: Water-cooled manifolds.
- Governor: Variable-speed, 12 VDC shutdown solenoid.
- Oil Pan: Deep-sump, cast iron.
- Starting Motor: 12 VDC with pilothouse and local control
- Accessory Drives: SAE "B" splined for hydraulic pumps on both engines.
- Air Compressor: Engine-driven, 7.5 CFM, accessory-pad mounted; one engine only.

- Pilothouse instrument panels with tachometers, hour meters, gear oil pressure, lube oil pressure and coolant temperature gauges.
- Local instrument panel(s) including ammeter, lube oil pressure and coolant temperature gauges.

233.3 The propulsion engines/gears shall be aligned with the propeller shaft couplings and shall be bolted through the foundations. The engines shall be brought into alignment using jacking screws and after final checking, epoxy chocking compound; "Chockfast Orange" or equal, shall be poured between foundations and mount feet. The engine manufacturer's recommendations shall be strictly followed with respect to alignment procedure and bolting. Bolts used to secure engines and gears to foundations shall be SAE grade 8.

233.4 Collision chocks shall be welded to engine foundations just clear of gearbox mount feet.

## 240 TRANSMISSION AND PROPELLER SYSTEMS

### 241 Propulsion Reduction Gears

Twin Disc model MG-5091 or approved equal reverse/reduction gears, shall be close-coupled to the propulsion engines and installed as shown on the plans. The gears shall be set up so that opposite rotation of the propeller shafts is achieved by running one gearbox in "reverse". Builder shall specify the optimum reduction ratio to match the engine power to 44 inch diameter propellers and the specified 3-1/2 inch diameter shafts.

### 242 Propulsion Clutches and Couplings

Shafts shall be attached to the reduction gears using couplings provided by the gear manufacturer. Couplings shall be taper bored, keyseated and counterbored for bolted retainer plates, and shall be square to and concentric with the shaft centerline within 0.0005 inches per inch of flange diameter.

### 243 Propulsion Shafting

Shafts shall be 3-1/2 inch diameter 17-4 PH stainless steel, approximately 175 inches long. Four inch O.D. type 304 stainless steel shaft sleeves shall be shrink fit onto the shafts in way of the bearings and stuffing boxes: at two places on each shaft. The after ends of the shafts shall be tapered and keyseated per SAE standard J-755 to fit the propeller hubs. The forward ends also shall be tapered, keyseated and threaded to mate with couplings as described in paragraph 242. All keyways shall have spooned ends.

### 244 Propulsion Shaft Bearings and Stuffing Boxes

244.1 Kahlenberg cast-iron bronze-bushed stuffing boxes shall be bolted to the forward faces of the shaft recesses. Proper running clearance between the bronze bushings and the shaft sleeves shall be verified. Packing shall be Gore brand.

244.2 Stern strut bearings shall be cutless rubber with naval brass shells; Johnson "Duramax" or approved equal. Bearings shall be held in proper alignment by poured epoxy chocking compound, and shall be coated with mold release before pouring.

#### 245 Propellers

245.1 Propellers shall be four-blade, stainless steel, 44 inches diameter, having a blade area ratio of at least 0.70. Propellers shall have full taper length hubs. Propellers shall turn inboard at their tops with the pushboat going ahead. Propeller pitch shall be determined by the Builder to load the engines to no more than 95% of their maximum continuous rating when pushing the barge in the loaded condition specified for Trials (e.g., 27 inches mean draft).

245.2 Propellers shall have anti-singing edges and the hubs shall be drilled and tapped three places for puller bolts. Propeller hubs shall fit the shaft tapers with at least 60 percent contact as shown by blueing. Keys shall fit snugly against sides of keyways and shall have at least 0.025 inch clearance at top and bottom.

245.3 Propellers shall be secured to shafts by double nuts which shall be secured by tack-welded straps.

### 250 PROPULSION SUPPORT SYSTEMS

#### 251 Combustion Air System

Engine combustion air shall be ducted to engine-mounted air filters from outside through capped intake stacks on the upper deck. Intakes and ducting shall be sized so as to insure acceptable levels of air velocity and pressure drop at full rated engine speed.

#### 252 Propulsion Control System

252.1 Propulsion engine speed and direction shall be controlled from the pilothouse using a Twin Disc or approved equal electronic control system.

#### 257 Fresh Water Cooling/Keel Cooling Systems

257.1 Engines shall be equipped with closed keel cooling systems. Fernstrum gridcoolers, of the size recommended for the engines selected shall be installed in recesses in each side of the vessel, as shown on drawing 256-101. Keel coolers shall be sized to allow proper cooling of the engines in 85°F water at a speed of 2 kts while developing full power. Piping between keel coolers and engines shall be galvanized steel or copper tubing. Rubber hose connections with double stainless steel clamps shall be provided at engines and keel cooler cofferdams. Cooling passages and piping shall be pressurized to 30 PSI and proved tight.



257.2 Expansion tanks shall be mounted on the deckhouse sides above the main engines and piped to the engines following engine manufacturer's installation requirements. Tanks shall be fabricated from 3/16 inch (minimum) steel and shall have a capacity of at least 15 percent of the volume of the engine jackets, keel coolers and connecting piping. Each expansion tank will be fitted with a filler/breather cap and a Murphy "Swichgage"<sup>(TM)</sup> combination level gage and low-level alarm. Alarm contacts shall be set to annunciate low coolant level (below normal low cold level).

### 259 Exhaust Piping and Mufflers

259.1 Engine exhaust systems shall be dry, discharging through the transom above the waterline as shown on drawing 256-101.

259.2 Exhaust piping and mufflers shall be insulated to the extent shown on the drawings

259.3 Flanged stainless steel vibration-isolating sections shall be located as shown and shall be covered with insulating blankets, laced in place with stainless steel wire to permit ready removal for inspection of flex sections.

259.4 Maxim model M-31 or approved equal silencers shall be provided for each propulsion engine. Silencers shall be mounted using vibration and heat-isolating hangers. Special care shall be taken to mount all exhaust components using hangers which will not transmit heat or telegraph noise or vibration to the vessel's structure. Silencers shall be mounted vertically and shall be arranged with side inlets and bottom outlets.

259.5 Engine crankcase breathers shall be piped back to the intake air silencers through Nelson or Walker "AirSep" oil vapor recovery filters.

## 260 PROPULSION FUEL AND LUBE SYSTEMS

### 261 Fuel Service System

261.1 Fuel supply and return lines shall be black iron pipe installed in accordance with drawing 541-101.

261.2 A Racor model 900MA fuel/water separator shall be provided in the supply line to each main engine. A Racor model 500MA fuel/water separator shall be provided in the supply line to the generator set. Valves shall be installed on each side of the separators to permit servicing them with minimal loss of fuel or introduction of air into the fuel lines.

261.3 Each engine and the generator set shall have its own fuel supply line from the fuel tank.

261.4 Return lines from each engine and the generator set shall penetrate the aft fuel tank bulkhead about 12 inches below the main deck. A check valve shall be fitted in each return line.

264 Lube Oil

A lubricating oil tank of approximately 85 gallons capacity shall be provided and installed in the starboard aft corner of the deckhouse. Tank shall have a readily accessible filling port on top and a draw-off cock and drip pan from which a 4-quart hand oiler can be filled. See drawing 506-101.

290 SPECIAL PURPOSE SYSTEMS

298 Propulsion Plant Operating Fluids

298.1 Lube and fuel oil used shall be as recommended by the various equipment manufacturers.

298.2 Coolant shall be a 50/50 water/glycol mixture with coolant additive as prescribed by engine manufacturer.

299 Propulsion Plant Repair Parts and Special Tools

Refer to section 081.

**GROUP 3 ELECTRIC PLANT**

300 ELECTRIC PLANT, GENERAL

300.1 The vessel shall have two separate electric systems:

- (1) 12 volt direct current for diesel generator instruments, alarms, and starting; main engine instruments and alarms, and for ship's service, and
- (2) 120/240 volt alternating current for ship's service supplied by the diesel generator set or by shore power.

300.2 The entire electrical installation shall be in strict accordance with the electrical drawings and shall comply with the rules contained in 46 CFR 183 and other standards and publications invoked by reference, including Underwriters Laboratories; the Inland Navigation rules Act of 1980, and Federal Communications Commission (FCC) Rules relative to radiotelephone installations.

302 Motors and Associated Equipment

302.1 All motors of 1 horsepower or more shall be wired for 240 volts/1-phase. Motors shall be rated for continuous duty and shall have overload protection. Motors shall meet NEMA frame and shaft standards. Full-load and locked-rotor current shall not exceed NEMA standards.

Table 302.1(a) AC MOTOR LIST				
Equipment	Motor HP	Type	Volts/Ph	Starter Remarks
Engine Room Vent Fan	1/2	ODP	120/1	LVP, Manual
Air Compressor	5	ODP	240/1	Pressure switch, LVP, Magnetic
Bilge Pump	3/4	TEFC	240/1	Switch, LVP, Magnetic
LVP = Low Voltage Protected (non-restart)				

### 310 ELECTRICAL POWER GENERATION

#### 311 Ship's Service Power Generation

311.1 One 20 kW/120/240VAC/60-Hz/1-phase/1800 rpm diesel generator set with self-excited alternator and solid-state regulator shall be furnished and installed. Generator shall be supported by cushion mounts on a steel drip-pan skid base. The ship's service generator shall be locally started and shall be supplied from the fuel system as shown on drawing 541-101. Dry exhaust system shall be provided and installed including flex section, discharge line, Maxim model MUL or equal muffler, and penetrations of the aft bulkhead and transom; all as shown on drawing 311-101. The generator set shall be keel cooled. Cooling piping shall be galvanized steel with threaded joints and flexible hose sections, similar to main engine cooling piping.

311.2 The control section shall be capable of regulating the output of the generator within +/- 5 percent over the entire load range.

#### 313 Batteries and Service Facilities

313.1 The 12 volt/size 8D ship's service battery; Delco, Surrrette or equal, shall be installed in fiberglass box with a ventilating cover and wedged to prevent movement. The battery shall be located in the void below the pilothouse.

313.2 The generator starting battery shall be 12V/1000CCA, installed in a fiberglass-lined box in the engine room.

313.3 The batteries shall be charged by a Coast Guard approved charge-compensating rectifier, Newmar model HDM-50 or approved equal, and by main engine-driven 60-amp alternators through isolating diodes.

## 320 POWER DISTRIBUTION SYSTEMS

### 321 Ship Service Power Cable

321.1 Provision shall be made to supply the ship's 120/240 volt electrical system from shore power, through a 100-amp reverse-service receptacle. Source selection will be via interlocked circuit breakers as shown on drawing 321-101. Builder shall supply a mating plug and 100 foot flexible 4-conductor type SO shore power cord, all as shown on the plans.

321.2 Primary power cable between shore power receptacles, generators and interlocked source selector circuit breakers shall be unarmored, type NIU or XIU as shown on the drawings.

321.3 All other 120/240 VAC and 12 VDC lighting and power cables shall be type-NIU of the size and number of conductors as determined by the load and/or as shown on the plans.

321.4 Generator starter leads shall be heavy-duty, rubber- insulated stranded welding cable, sized as recommended by the generator manufacturer and run as directly as possible. No connections of cables other than the starting leads shall be made to battery terminals: all other power leads shall terminate at starter posts on the generator set, or at bus bars or junction boxes.

321.5 Radio and electronics, engine instrumentation, RF and ground cables and intercommunication wiring shall be of a type and size as recommended by the equipment manufacturer and as required by applicable regulations.

321.6 All wiring and cable runs shall be neat and orderly; supported in proper cableways, hangers or trays. Supports and straps shall be spaced at no more than 24 inch intervals on vertical and horizontal runs. Straps shall be stainless steel. Nylon "Ty-Raps" are not acceptable. Cables shall be protected against physical damage or chafing. Stuffing tubes, kick pipes or multicable transits, Nelson "MCT" or equal, shall be used at all penetrations of watertight work. Cuts for cable passage through nontight structure shall be smooth and cables shall be protected against chafe and vibration. Bushings or grommets shall be employed at all single-cable holes, and ring penetrations shall be lined with split hose.

321.7 All cables shall be tagged or otherwise identified at each end and at junction boxes or panelboards.

321.8 Cable runs shall be protected from physical damage and shall not obstruct access. Cables in passenger cabin and pilothouse shall be concealed. Cables supplying upper deck lights shall be run inside house sides and shall enter bulkhead-mounted fixtures from the inside. Cables shall not be run in bilges or where subjected to heat from engines or exhaust pipes.

321.9 Sufficient slack shall be left in all cables at connections to motors and equipment to allow for service access and to minimize vibration damage.

321.10 Cables which must be run through tanks or where physical damage is possible shall be encased in Schedule 40 pipe, arranged to be completely self-draining.

### 324 Switchgear and Panels

324.1 The main 120/240 volt distribution panel shall be a Square-D three-phase model QO312L125GRB, arranged as shown on drawing 321-101. Main breakers shall be three-pole.

324.2 The engine room and pilothouse distribution panels shall be Square-D single-phase as shown on drawing 321-101. Circuit breakers for 120-V loads shall be single-pole; those for 240-V loads shall be two-pole.

324.3 Engine room and pilothouse distribution panels shall be Bass or equal single-pole circuit breaker panels, model 90-5145.

324.4 A 240V/60A weathertight receptacle, equal to Hubbell 8460A with model 7777A cover and matching plug, shall be provided and hubbed to the 120/240V main panel on forward engine room bulkhead.

## 330 LIGHTING SYSTEM

### 332 Lighting Fixtures

332.1 All 120 volt lighting fixtures shall bear the Underwriters Laboratories label. Fixtures installed in the hull or exposed to the weather shall be of watertight type and shall carry UL-595 labels; all other fixtures shall be UL- designated "suitable for use in wet locations".

332.2 Watertight fixtures shall be of substantial design and construction; fully gasketed and provided with stuffing tubes for cable entry. Glass globes shall be heavy duty, screw-on type and guards shall be provided.

332.3 Two 500-watt deck floodlights shall be provided: one installed forward and one aft. Lenses shall be tempered, heat-resistant glass.

332.4 Interior light fixtures shall be fluorescent type of aluminum construction with diffuser lenses; Pauluhn FLC 240 or approved equal.

332.5 Navigation lights shall be 12 volt D.C. (See Section 422, Running Lights). All 12 volt D.C. bulbs shall be LED, when available.

332.6 Two lever/gear operated searchlights, Perko fig. 885 or approved equal, shall be provided and installed on top of the pilothouse. The switches for the searchlights shall be located convenient to the searchlight controls as directed by Owner's representative. The searchlights shall have medium pedestal bases and white powder-coat finish. The port side searchlight shall be 14 inch, 120V, 1000 watt. The starboard searchlight shall be 12 inch, 12VDC, 100 watt.

332.7 Deck lights on both pushboat and barge shall be switched in the pilothouse. Deck lights shall be watertight, incandescent type; Pauluhn 707A-PG or approved equal with polycarbonate globes.

**370 EMERGENCY LIGHTING**

370.1 Three heavy-duty waterproof flashlights shall be provided in a designated stowage space in the wheelhouse.

370.2 Ten light fixtures on the 12 VDC system shall be provided and installed: two in pilothouse, four in deckhand room, and four in the engine room.

**GROUP 4 COMMAND AND SURVEILLANCE**

**420 NAVIGATION SYSTEMS**

**422 Navigation Lights**

422.1 The following 12VDC running lights, powered from the ship's service battery and controlled by a running light panel in the pilothouse, shall be provided and installed according to the plans:

Table 422-1 (a) RUNNING LIGHTS				
Name	Perko Fig. No.	Color	Arc Degrees	Location
Starboard	1127 GAO BLK	Green	112.5	Starboard side of pilothouse top
Port	1127 RAO BLK	Red	112.5	Port side of pilothouse top
Towing	1129 MAO BLK	Yellow	135	Two on aft mast
Masthead	1128 AOO BLK	White	225	Two on forward mast
Stern	1129 AOO BLK	White	135	On aft mast

422.2 The running light panel shall also be arranged to control the navigation lights on the barge, as shown on drawing 321-102.

423.2 All 12VDC running lights shall be LED, when available.

**430 INTERNAL COMMUNICATIONS**

**433 Announcing Systems**

Builder shall provide and install a hailer/intercom, Raytheon model Ray-420 or current production equivalent. The master station shall be installed in the pilothouse and horns shall be installed on the forward bulkhead of the pilothouse below the visor and in the engine room.

436 Alarm, Safety, and Warning - Monitoring Systems

436.1 The main engines shall be equipped with audible 12 volt DC alarms for low lube oil pressure, high coolant temperature, battery discharge and low coolant level, and indicator lights which shall annunciate the exact alarm condition.

436.2 The generator set shall be equipped with automatic shutdown in event of low lube oil pressure or high coolant temperature.

436.3 The main engines shall be equipped with 12 volt DC instruments (as called out in 233.2) which shall be installed in accordance with the manufacturer's instructions. Pilothouse instrument panels shall be installed above the windshield as shown on the plans.

436.4 Engine oil pressure, water temperature gauges and ammeters for each main engine shall be installed in the engine room. Main engines shall have pilothouse start/stop controls and provision to disable the starting circuits from the engine room.

440 EXTERNAL COMMUNICATIONS

441 Radio Communication Systems

441.1 Two (2) marine band VHF-FM radios, Icom model IC-M59-B or current production equal, complete with 6 db antennas, shall be provided and installed in the pilothouse.

441.2 Builder shall also provide two circuits in the DC distribution panel for Owner furnished VHF radios.

445 Horn and Signalling

445.1 Builder shall provide and install a dual-trumpet air horn, Kahlenberg model D-O, with spun projectors and brass finish; strainer and control valve. Horn shall be installed on the pilothouse top, piped to the air system through a manually-activated whistle valve.

**GROUP 5 AUXILIARY SYSTEMS**

500 AUXILIARY SYSTEMS GENERAL

501 General Arrangement - Auxiliary Systems Drawings

Mechanical and piping systems shall be designed in accordance with good marine practice and installed in strict accordance with the approved drawings, to the satisfaction of the Owner.

### 502 Auxiliary Machinery

Auxiliary machinery shall be of high quality and of adequate size and rating for the particular application. Machinery and equipment shall be of rugged commercial or industrial quality. Like equipment shall be made by the same manufacturer and shall be of the same class, size or style insofar as possible. Equipment shall have replaceable parts or components, and the facility of making repairs in the field will be considered in evaluating equipment substitutions proposed by the Builder.

### 503 Pumps

503.1 Two DC bilge pumps with automatic float switches shall be provided and installed as shown on the plans.

503.2 One electric and one engine-driven bilge pump shall be provided and installed as shown on drawing 541-101.

503.3 Two engine-driven steering hydraulic pumps shall be provided, one mounted on the accessory pad of each main engine.

### 505 General Piping Requirements

505.1 Piping design and installation shall be in accordance with good marine practice and the Contract Plans. Piping runs shall be neatly laid out, well supported and arranged to provide ready access to both the piping itself and any structure behind it. Piping materials shall be as listed in Table 505-1. Fittings shall be compatible with and appropriate for the specific systems. Valves shall be of rugged design and shall be rebuildable. Globe valves shall be used to regulate flow; gate or ball valves shall be used for shut-off service. Flexible connections shall be provided at all moving equipment or wherever necessary to compensate for expansion. In general, Dresser couplings or unions shall be provided to facilitate takedown.

505.2 All piping and equipment shall be labeled, tagged, color coded or otherwise identified to assure proper operation and service.



Table 505-1 PIPING SCHEDULE				
System	Lines	Fittings	Valves	Remarks
Fuel Oil	Schedule 40 black steel, seamless, ASTM-A106	Forged steel socket weld or threaded, black	125 lb. WOG threaded iron, steel or bronze; gate type	USCG-approved hoses at engine connections Test to 35 PSI
Engine Cooling (Jacket Water)	Steel, ASTM-A106 schedule 40, galvanized; or Type K copper	150 lb. galvanized butt weld or threaded or sweat soldered wrought copper	Heavy-duty hose with double screw-type stainless steel clamps at connections to engines and keel coolers	
Engine Exhaust	Black steel, schedule 40, ASTM-A53	Butt weld, schedule 40 steel	Flex sections to be convoluted stainless steel with flanges at both ends	
Bilge and Firemain	Galvanized steel schedule 40, ASTM-A153	Threaded 150 lb. galvanized malleable iron	125 lb. WOG threaded; bronze, gate, ball or globe type	All firemain lines to be arranged to self-drain. Test firemain to 90 PSI. Test bilge system to 35 PSI.
Deck Drains	Galvanized steel, schedule 40, ASTM-A53	Butt welded miter joint and/or bent pipe	None	To be arranged to self-drain.
Compressed Air	1/2" and above: schedule 40 black steel, seamless. Below 1/2": Soft copper tubing or nylon tube bundles.	150 lb. black malleable; threaded brass flare or compression for tubing	150 lb. WOG bronze or brass; threaded ball type	Test to 150 PSI
Hydraulic	Schedule 80 black steel, seamless, ASTM-A106 or seamless steel hydraulic tubing 0.083" wall	3000 lb. socket weld black steel forged or Aeroquip or equal; SAE O-ring type	Ports compatible with fittings and lines.  Hoses: Aeroquip or equal; reuseable fittings; wire braid hose. One end fittings on each hose shall be swivel type. Flush system before connecting components. Test to 150% of working pressure.	
Vents	Schedule 40 black steel pipe, ASTM A53	Schedule 40 black steel, forged.	N/A	

506 Overflows, Air Escapes, Sounding Tubes and Vents

Overflows, air escapes, sounding tubes and vents shall be provided for all hull compartments and tanks as shown on drawing 506-101. Fuel tank fill and vent shall be enclosed in a spill containment box on the forward deckhouse bulkhead. All vents shall be fitted with insect/flame screens.

510 CLIMATE CONTROL

512 Ventilation System

512.1 Ventilation of pilothouse shall be natural via the port and starboard doors and the opening forward windows.

512.2 Windows to deckhand room may be opened for ventilation.

512.3 Two 12VDC oscillating fans, Guest or equal, shall be mounted above the windshield in the pilothouse.

513 Machinery Space Ventilation System

513.1 Main machinery space shall have natural air supply through a duct on the aft bulkhead. The opening in the aft bulkhead shall be fitted with louvers and a 30-mesh insect screen. Air shall be exhausted from the top of the engine space by a 24 inch fan mounted in the overhead and discharging into a plenum below the pilothouse steps. The fan shall be driven at approximately 1725 RPM by a 1/2 HP/120VAC motor.

514 Air Conditioning System

514.1 Pilothouse and deckhand room shall be air conditioned and heated using "through-the-wall" room air conditioners with heating coils installed as shown on drawing 512-101.

514.2 Electric fan-forced defrosters shall be provided for pilothouse windshields. Defrosters shall be installed in the void below the pilothouse and be ducted to the windshield as shown on drawing 641-101.

520 SEA WATER SYSTEMS

526 Scuppers and Deck Drains

All areas of the deck shall be free draining with no water traps, pockets or places where water can stand and freeze.

529 Bilge Drainage System

529.1 One 12 VDC Lovett automatic bilge pump, or approved equal, shall be provided and installed in the pocket below each shaft gland. Bilge pumps shall discharge through check valves at the shell just below the sheer.

529.2 A Jabsco model 6590 clutched bilge pump shall be belt driven from the front of the starboard propulsion engine. The Jabsco pump shall take suction from the bilge manifold and shall discharge through a valve on deck.

529.3 An electric motor-driven bilge pump; Scot model 74-75 or approved equal, with 3/4 HP 120VAC electric motor, shall also be arranged to take suction from the bilge manifold.

## 540 FUELS AND LUBES - HANDLING AND STOWAGE

### 541 Ship Fuel System

541.1 Fuel shall be carried in one integral tank of about 3000 gallons capacity; separate from the bottom and side shell of the pushboat and bounded by transverse bulkheads 7 and 12; longitudinal bulkheads 6 feet off centerline port and starboard; an inner bottom 40 inches above base line, and the main deck. Longitudinal swash bulkheads shall be provided on centerline and 36 inches off centerline on both sides. Two bolted manholes shall be provided in the main deck for access to the tank.

541.2 Fuel fill and vent pipes shall be 2-1/2 inch schedule 40 black steel pipe, enclosed in a spill containment box on the forward deckhouse bulkhead.

Spill box shall be fitted with a drain fitting, valve and quick-connect fitting for attaching a pump-out hose.

541.3 Connections to the tank to supply fuel to the engines shall be in bulkhead 12.

541.4 After completion of welding, the tank shall be hydrostatically tested to an internal pressure of 5 PSI (11 foot head of water). After testing, tank shall be drained dry, cleaned thoroughly of all scale, dirt, debris and foreign material and wiped down with fuel oil, then manholes installed and bolted down.

## 550 AIR, GAS AND MISCELLANEOUS FLUID SYSTEMS

### 551 Compressed Air System

551.1 Compressed air shall be supplied by one 7.5 CFM engine-driven air compressor and one pressure lubricated electric motor-driven compressor. The electric motor driven compressor shall have loadless automatic stop/start and shall be mounted on a 80 gallon receiver tank. Compressor shall be Quincy or approved equal.

551.2 The air supply from the engine driven compressor shall be routed through a truck air brake dryer to a 10 gallon auxiliary receiver tank and then on to the vehicle tire barrier system.

551.3 The air from the electric motor driven compressor shall be routed to the "latch" cylinders, the windshield wiper and the air horn. A second 10 gallon auxiliary receiver shall be mounted in the void below the pilothouse. A normally closed connection shall be provided between the 80 gallon tank and the air brake dryer indicated in 551.2.

551.4 Automatic drain valves shall be provided at each receiver tank as shown on the plans.

551.5 Vehicle tire barrier cylinders shall be controlled manually by valves located on the barge. Latch cylinders shall be controlled from the pilothouse via solenoid-operated valves.

551.6 Piping shall be as indicated in Table 505.1(a) and as shown on the plans. Hoses shall be provided at all moveable connection points (pushboat/barge connection; tire barrier cylinders; latch cylinders; compressors).

#### 555 Fire Extinguishing Systems

Three type B-II portable fire extinguishers shall provided by Builder in accordance with 46 CFR 25.30-20. Extinguishers and brackets shall be USCG approved marine type. One shall be mounted in the pilothouse, one in the engine room and one in the deckhand room.

### 560 SHIP CONTROL SYSTEMS

#### 561 Steering Control Systems

561.1 Builder shall provide and install independent mechanical follow-up/hydraulic-actuated steering and flanking rudder systems. Control levers for each system shall be mounted on the port side of the pilothouse console as shown on the drawings. Levers for steering and flanking rudders shall mechanically actuate the spools of the respective control valves as shown on drawing 561-101. Hydraulic lines shall be neatly run, properly supported and isolated from structure.

561.2 Steering cylinders shall be securely mounted to their foundations and shall act on the tie rods. Cylinders shall remain in proper alignment over their entire strokes, without binding, kinking hoses or overloading any fittings. Padded stops for the tiller arms shall be provided just before each cylinder rod reaches its full extension or retraction. The rudders shall have equal 40 degree angular travel to each side of amidships. The system shall be designed to move the rudders of either system from hard-over to hard-over in no more than 8 seconds with engines at idle (600) RPM.

561.3 All threaded fasteners used to mount steering cylinders and associated hydraulic components and mechanical parts shall be at least SAE grade 8, and shall be positively secured by use of lockwashers, double nuts or safety wires.

561.4 A 20 gallon reservoir for steering hydraulic fluid will be provided and installed in the engine room. The reservoir shall include a filler/breather, thermometer/level gage and two suction strainers for pumps, which shall be flanged to the accessory drive pads on the propulsion engines.

561.5 The two hydraulic steering pumps shall be gear type; flanged to and driven by accessory drive pads on each main engine, as shown on the plans.

## 562 Rudders

562.1 The vessel shall have two steering rudders and four flanking rudders as shown on drawing 562-101. The rudders shall be 3/8 inch steel plate on 3-1/2 inch diameter stocks of 1045 steel with stainless sleeves at bearings. Tillers and collars shall be fabricated of steel. Rudder tubes shall be bored at top and bottom to receive bushings, and shall run continuously from main deck to hull bottom. Tie rods shall link the rudders of each system. The system shall be as shown on drawing 562-101.

562.2 Steering and flanking rudder gear shall be tested at the dock to determine hard over to hard-over steering and flanking rudder systems are configured to provide full rudder swing from 40 degrees to 40 degrees, hard over to hard over, in either direction within 14 seconds while engines powering hydraulic steering pumps are at idle. Additional testing is to demonstrate tightness of all lines and components with engines at rated speed. The follow-up control systems shall be adjusted as necessary and brought into synchronization with the rudders.

562.3 Rudder collars shall be V-grooved ("keyless") design and stocks shall have milled flats at 90 degrees; all as shown on drawing 562-101.

## 580 MECHANICAL HANDLING SYSTEMS

### 582 Mooring and Towing Systems

A fixed hitch arm shall be installed on centerline forward. The hitch arm shall be constructed to allow independent movement of the dedicated barge and the pushboat. The hitch arm shall allow an "about-face" of the pushboat without disconnecting. Latches controlled from the pilothouse shall secure the pushboat alongside the barge. The latches shall engage angles on each side of the barge.

### 583 Safety Systems

583.1 Builder shall mark with vessel's name and stow onboard 4 adult life jackets. Jackets shall be U. S. Coast Guard approved.

583.2 One 30 inch diameter ring buoy with attached water light and 60 foot line shall be marked and stowed on brackets on aft pilothouse bulkhead.

583.4 An Orion, or approved equal, emergency signal kit in a waterproof container shall be provided and stowed in the pilothouse.

590 SPECIAL PURPOSE SYSTEMS

593 Environmental Pollution Control Systems

Builder shall provide and install environmental control placards as required by 33 CFR 151.

598 Auxiliary Systems Operating Fluids

Hydraulic fluid shall be as recommended by supplier of hydraulic system components.

**GROUP 6** OUTFIT AND FURNISHINGS

600 OUTFIT AND FURNISHINGS, GENERAL

602 Hull Designating and Marking

602.1 Vessel's name in letters 8 inches high shall be cut from plate and welded to the stern and both sides in accordance with documentation requirements of the U. S. Coast Guard. The Vessel's official number shall be center punched or outlined in weld bead and painted as directed on a bulkhead in the hull.

602.2 Navigational draft numbers shall be cut from plate, welded on and painted. Numbers shall be located on the transom on centerline and port and starboard at the bow.

604 Locks, Keys and Tags

604.1 All necessary labeling, stencilling and marking shall be made on separate plaques, boards or labels which shall be screwed to structure. All life jackets and the ring buoy shall be marked with the vessel's name and port.

604.2 All exterior doors shall be fitted with high quality stainless or bronze commercial-grade mortise locksets, Merit or approved equal, and two sets of keys shall be provided. All keys shall be tagged for identification. Locksets proposed to be used shall be approved by Owner prior to installation. Locksets with stamped or pressed steel internal parts are not acceptable. All locks are to be keyed alike.

610 SHIP FITTINGS

611 Hull Fittings

Six 24 inch cast steel kevels shall be provided and installed on the vessel as shown on the plans.

612 Rails, Stanchions and Lifelines

612.1 Safety rails 36 inches in height shall be built around bow and stern, along both sides, and around the pilothouse and upper deck, as shown on the plans.

612.2 Fixed pipe railings shall be installed on each side of the inclined ladders to engine room and to the pilothouse, as shown on the plans.

612.3 A rail shall be provided around the top of the pilothouse for security when servicing navigation lights.

620 HULL COMPARTMENTATION

623 Ladders & Stairs

623.1 Inclined stairs from main deck to deckhouse top and to the pilothouse shall be built as shown on the plans. Care shall be taken when constructing stairways to assure that all treads line up and that rises and runs in each flight are uniform. Inner corners of treads shall be limbered to assure drainage.

623.2 The stairway to the engine room shall be installed to not obstruct access to the starboard shaft gland, and shall be bolted in place.

623.3 Ladders or climbing rungs shall be provided below each tank or compartment manhole. Ladders shall also be provided for access to the pilothouse top, for emergency escape from the engine room, and for access from main deck to pilothouse; all as shown on the plans.

623.4 All stairways shall have Wooster type 500 non-skid abrasive stair tread overlays. Railings shall be provided on both sides.

624 Non-Structural Closures

624.1 Weathertight doors shall be provided in the pilothouse sides and the deckhouse bulkheads as shown on the plans. Doors to deckhouse shall have 3 inch sills. All doors shall be 1-3/4 inches thick with 16 gage faces, gaskets and three hinges. Frames shall be steel. All doors shall have fixed lights.

624.2 A weathertight escape door, openable from inside, shall be provided forward on port side of engine room.

625 Windows

625.1 Opening and fixed windows shall be provided in the deckhouse sides and pilothouse bulkheads as shown on the plans.

625.2 Pilothouse windshield shall be aluminum-framed, 3-section and shall slide open.

625.3 Fixed windows shall be 1/4 inch safety plate glass set in rubber window channel molding.

## 630 PRESERVATIVES AND COVERINGS

### 631 Painting and Surface Preparation

631.1 Vessel shall be painted with protective coatings applied over surface preparations as listed in Table 631-1, Paint Schedule. This Paint Schedule is given as a guide to the level of quality required. Builders are encouraged to quote on their standard systems. Color scheme shall be as selected by Owner, and all painting shall be subject to approval by Owner or his representative.

631.2 Paint application shall strictly follow the manufacturer's instructions, with special attention to recoating times, temperature and humidity conditions.

631.3 All painting on both the interior and exterior surfaces of the hull shall be completed, including curing, before the vessel is launched. Prior to launching the vessel, painted hull interior and exterior surfaces shall be thoroughly inspected. Notice shall be given to the COR seven (7) days in advance of the scheduled launching for this purpose. The vessel shall not be launched until the painting has been approved.

631.4 Prior to delivery, all interior and exterior painting shall be thoroughly inspected. Any defects in the coating system shall be repaired by the Contractor to restore the integrity of the paint. Any additional painting required as a result of this final inspection process shall be done to the satisfaction of the COR at no additional cost to the Owner.

631.5 The Contractor is responsible for delivering the vessel with all painted surfaces in good condition, and for obtaining THE PAINT WARRANTY DECLARATION from the paint manufacturer.

631.6 The Contractor shall provide a Paint Warranty Declaration document written and signed by the paint manufacturer representative, clearly stating that the surface preparation, environmental conditions, coating application procedure and thickness for each area meets the manufacturer's requirements for the paint system used, and that under normal service conditions, the coating system will maintain its integrity for a period of five (5) years.



**TABLE 631-1 PAINT SCHEDULE**

SPACE OR AREA	PREPARATION	COAT S	DESCRIPTION	COLOR	WFT	DFT	RECOAT @ 70 DEGREES F.
Hull Exterior Keel to Sheer Rudders Skegs Struts	Near white metal blast SSPC-SP6	1 1	Amercoat 385 univ. epoxy Amercoat 385	Oxide Red Black	7.5 7.5	5.0 5.0	8 hours 8 hours —
Superstructure	Commercial blast SSPC-SP6	1 1	Amercoat 385 Amercoat 450HS	Pearl Gray White	7.5 3.0	5.0 2.0	8 hours 4 hours
Cabin Railings Cabin Top	Commercial blast cleaning SSPC-SP6	1 1	Amercoat 385 Amercoat 450HS	Pearl Gray Owner's Choice	7.5 3.0	5.0 2.0	8 hours 4 hours
Decks and Stairs Ladder	Commercial blast SSPC-SP6	1 1	Amercoat 385 Amercoat 385 ASA non-skid	Pearl Gray Pearl Gray	7.5 12.0	5.0 8.0	8 hours 12 hours
Voids (fwd & midship void, lazarette)	Power tool clean SSPC-SP3	1	Amercoat 5405	Owner's Choice White or other light color	9.0	6.0	10 hours
Engine Room	Power tool clean SSPC-SP3 SSPC-SP6	1 1 1	Amercoat 5105 quick dry alkyd Amercoat 5405 Gloss alkyd Amercoat 5405	Oxide Red White above floorboards, grey below	5.0 2.5 2.5	3.0 1.5 1.5	12 hours 6 hours 6 hours
Lube oil and Fuel Oil Tanks	Power tool clean	--	No paint				
Pilothouse Deckhand Room	Power tool clean SSPC-SP3	1 1 1	Amercoat 5105 Amercoat 5405 Amercoat 5405	Oxide Red Owner's Choice Owner's Choice	5.0 2.5 2.5	3.0 1.5 1.5	12 hours 6 hours 6 hours
Handrails, Ladders Numbers and Details	Commercial blast clean SSPC-SP6	1 1	Amercoat 385 Amercoat 450HS	Pearl Gray Owner's Choice	7.5 3.0	5.0 2.0	8 hours 4 hours

633 Cathodic Protection

633.1 Zinc anodes shall be installed adjacent to and on the rudders, and on the transom as directed. A total of eight ZHS anodes shall be provided.

634 Deck Covering

634.1 Deck coverings in the crew cabin and pilothouse shall be seamless vinyl or vinyl tile, per Builder's standard practice.

635 Hull Insulation

635.1 Thermal insulation for pilothouse, upper engine room and deckhand's room shall be mineral wool or fiberglass. Faced mineral wool insulation ("Navy Board" or equal) 3 inches thick of 6 pound per cubic foot density shall be applied to the inside of the upper engine room. Insulation shall be impaled on weld studs and retained by push-on caps, and shall be USCG-approved material.

637 Sheathing

637.1 Interior of crew cabin and pilothouse bulkheads shall be furred with 1 x 2 wood, sheathed with 3/8 inch plywood and covered with high pressure plastic laminate, Formica<sup>(TM)</sup> or equal. Colors and patterns shall be selected by Owner. Overheads shall be acoustical tile, glued to furring strips.

637.2 Trim and moldings shall be mahogany; neatly fit and installed.

640 LIVING SPACES

641 Berthing and Messing Spaces

641.1 Deckhand room shall be outfitted with one (1) single pedestal 30 inch square table, two (2) stackable chairs and four (4) single tier metal lockers.

660 WORKING SPACES

662 Pilothouse Furnishings

662.1 A console shall be constructed of steel in accordance with drawing 641-101 to provide space for engine control heads, steering levers, navigation light panel and switches.

662.2 An overhead panel above the windshield will provide space for engine instruments and alarms.

662.3 A desk and upholstered seat shall be provided on the aft bulkhead of the pilothouse.

662.4 One EACCO or approved equal helm chair shall be provided in the pilothouse.

**SPECIFICATIONS FOR 120 FT. PASSENGER/VEHICLE FERRY BARGE (KAMPSVILLE FERRY)**

**GROUP 0 GENERAL DIRECTION AND INFORMATION**

**070 GENERAL REQUIREMENTS FOR DESIGN AND CONSTRUCTION**

**070.1 Characteristics**

The Ferry will have the following particulars:

Length molded	120'-0"
Beam molded	35'-0"
Depth amidships, molded at side	4'-9"
Draft fully loaded,	3'-0"
Displacement, light ship	about 140 long tons
Displacement, fully loaded	about 302 long tons
Capacity - Vehicles and/or Deck Cargo	about 162 long tons
Passenger Capacity	149
Certification/Route	USCG Subchapter T, non-self-propelled ferry; Protected Waters route (Rivers)
Admeasurement	Less than 100 gross tons (U.S. Regulatory)

**071 WEIGHTS, STABILITY AND SUBDIVISION**

The hull shall be subdivided by transverse bulkheads to give a one-compartment standard of subdivision at the design full load draft of 3'-0".

**081 MAINTENANCE (Section Reserved)**

**085 ENGINEERING DRAWINGS**

**085 Plans Forming Part of the Specifications**

085.1 The following plans are considered to be part of and shall have the same effect as these Specifications.

116-201	HULL STRUCTURE - PLANS AND PROFILES
117-201	HULL STRUCTURE - SECTIONS
161-201	MISC. HULL DETAILS, FOUNDATIONS AND FITTINGS
422-201	NAVIGATION LIGHTS
529-201	FIREMAIN AND BILGE SYSTEMS
555-201	SAFETY PLAN
584-201	RAMPS AND SUSPENSION SYSTEM
611-201	TOWING LINKAGE
623-201	RAILS, LADDERS, GATES AND DECK FITTINGS
801-201	GENERAL ARRANGEMENT
839-201	TONNAGE PLAN
839-203	HULL LINES PLAN

085.2 Items or features appearing or called out in one document shall be interpreted as being in all relevant documents. In case of conflict, the Owner shall be consulted for resolution.

## **GROUP 1 HULL STRUCTURE**

### **100 HULL STRUCTURE – GENERAL**

The hull structure of the ferry shall be of welded steel. Longitudinal shell and deck stiffeners, continuous between transverse watertight bulkheads, shall be supported by transverse web frames and deep web (tonnage) frames. Sharp or ragged edges of exposed structural work and access holes where liable to injure personnel or damage equipment or shore facilities shall be ground smooth. Limber and drain holes shall be provided throughout as shown on the plans and as required for proper drainage. Particular care shall be taken to insure close fit of joints at seams, adequate and proper fastenings, and tightness as required. Doublers or other reinforcements shall be provided for holes cut through highly stressed regions of structural members.

### **110 SHELL AND SUPPORTING STRUCTURE**

#### **111 Shell Plating**

111.1 Headlogs and 12 inch radius corners shall be 1/2 inch plate. Corner plates shall be tapered 3:1 where they butt against the side plates.

111.2 Bottom shell plating in rakes shall be 5/16 inch hot rolled steel. Bottom shell plating between rakes shall be 1/4 inch hot rolled steel.

111.3 Side shell plating shall be 1/4 inch hot rolled steel, flanged to a nominal 3 inch radius at gunwales and 6 inch radius at bilges.

111.4 Plating shall be fair and smooth, and butts and seams shall be carefully fitted and properly welded to minimize both local distortion and overall lifting of the ends. In general, butt and seam welds shall be made before the shell plating is welded to internal structure. The sequence of welding shall be from centerline amidships out to sides and ends, symmetrically. All shell plate butts and seams shall be welded continuously inside and outside, and the roots of welds shall be back-chipped or air-arc gouged to sound metal before the closing pass is made.

#### **114 Shell Appendages**

114.1 Two fender pads of rubber bonded to steel backing plates, Morse "Pushnee" style E42000, or equal, shall be welded to the side of the barge which faces the towboat at bulkheads 4 and 26.

### 115 Stanchions

115.1 Structural stanchions of 5 x 5 x 3/8 inch angle and longitudinal diagonal bracing of 4 x 4 x 1/4 inch angle shall be welded to deck and bottom framing on centerline as shown on drawing 116-201.

115.2 Rake end stanchions shall be 3 x 3 x 1/4 inch angles at frames 1 and 29, and shall be fitted at each longitudinal stiffener and girder; all as shown on the plans.

115.3 Stanchions and diagonals shall be welded all around where they lap against or butt on girders or flanges.

### 116 Longitudinal Framing

116.1 Bottom and side longitudinal stiffeners shall be 3/8 x 5 inch flat bars 15 inches on centers. Deep side frames, floors and bulkheads shall be slotted for longitudinals, which shall be welded continuously to deep frames and bulkheads on both sides to comply with tonnage regulations. Longitudinal stiffeners shall have 1-1/4 inch radius limbers in each frame bay and within 12 inches on each side of watertight bulkheads.

116.2 A longitudinal bottom girder of 10 x 3 x 1/4 inch flanged plate shall be provided on centerline. Girder shall be intercostal between transverse bulkheads and shall be "egg crated" where it crosses the intermediate and deep frame floors.

### 117 Transverse Framing

117.1 Transverse frames shall be located on 48 inch centers and will alternate between "deep" or tonnage frames and intermediate frames.

117.2 Floors of intermediate frames shall be 8 x 3 x 1/4 inch flanged plate and side frames shall be 12 x 3 x 1/4 inch flanged plate.

117.3 Floors of deep frames shall be 8 x 3 x 1/4 inch flanged plate and side frames shall be 1/4 inch plate with 3 x 3 x 1/4 inch angle stiffeners and lightening holes as shown. In order for the vessel to admeasure less than 100 gross tons, the limitations on size, spacing and proximity to shell of lightening holes, as well as welding of longitudinals, as shown on the drawings must be adhered to.

## 120 HULL STRUCTURAL BULKHEADS

### 121 Longitudinal Structural Bulkheads

121.1 Longitudinal non-tight bulkheads shall be fitted 7'-6" port and starboard of centerline. Bulkheads shall be cut from 1/4 inch plate with lightening/access holes, all as shown on drawing 116-201.

## 122 Transverse Structural Bulkheads

122.1 Transverse watertight bulkheads shall be located and constructed as shown on drawing 116-201. Bulkheads shall be 1/4 inch plate with 3 x 3 x 1/4 inch angle stiffeners 30 inches on centers.

122.2 Watertight bulkheads shall be welded to shell and deck plate continuously on one side and intermittently on the opposite side, in accordance with ABS welding requirements, and shall be proven tight to the satisfaction of the attending USCG inspector.

## 130 HULL DECKS

### 131 Main Deck

131.1 Main deck shall be 3/8 inch mild steel plate with all seams and butts welded flush and continuously on both sides. Deck plating shall lap over the side and headlog flanges and the welds thereto shall be continuous on both sides. Deck shall be cambered with a straight-line 2 inch pitch from centerline to sides between peak bulkheads. Camber will decrease between peak bulkheads and headlogs as sides rise to ends.

131.2 Primary deck stiffeners shall be 4 x 4 x 1/4 inch angles, 15 inches on centers, or equivalent section. All deck longitudinals shall be intercostal between watertight bulkheads.

131.3 Transverse deck beams shall be 12 x 4 x 1/4 inch flanged plate, 48 inches on centers, and shall be intercostal between the centerline girder and either deep side frames or intermediate side frames.

131.4 Longitudinal deck girder on centerline shall be 12 x 4 x 1/4 inch flanged plate, and shall be intercostal between transverse bulkheads.

## 160 SPECIAL STRUCTURES

### 161 Sea Suction

Fire pump supply shall be schedule 80 pipe external to the hull with a strainer at the lower end; all as shown on drawing 529-201.

### 167 Hull Structural Closures

Two flush watertight hatches, Nabrico model DF-430-18D or approved equal, 18 inch diameter clear opening, operable from both above and below, shall be fitted in the main deck for access to each hull void. Hatches shall have steel rings set 1/2 inch above the deck. Covers shall be provided with retaining chains to prevent loss overboard.

169 Special Purpose Closures and Structures

169.1 Vehicles will board the ferry over hinged ramps (aprons) at each end. Ramps shall be about 15 feet long by about 30 feet wide at the headlogs by about 23 feet wide at the outer ends. Ramps shall be built of 10 inch beams, plate and bar grating; all as shown on drawing 584-201. Ramps shall mate with shore wedges as shown on IDOT drawings.

169.2 Ramps shall be supported by 3/4 inch "Spectrum 8" or equal chains and ratchet turnbuckles, all as shown on the drawings. Ramp pivot pins shall be 1/2 inch wall tubing.

170 MASTS, KINGPOSTS AND SERVICE PLATFORMS

172 Kingposts and Support Frames

172.1 Kingposts to support the ramps shall be fabricated and installed at the ends of the ferry. Kingposts shall be 12 inch XS structural pipe with 6 inch schedule 80 pipe backstays. Kingposts and backstays shall be substantially welded to reinforcements and primary structure as shown on the drawings. Exterior portions of all members shall be welded watertight, and drainage holes shall be provided in rake voids.

180 FOUNDATIONS

184 Light Foundations

184.1 Navigation lights shall be mounted on kingposts as shown on drawing 422-201. Shields shall be provided to limit arcs of visibility as required by COLREGS.

184.2 Deck lights shall be mounted on port and starboard rails as shown on drawing 623-201.

185 Fire/Bilge Pump

185.1 Foundations shall be constructed on port side at about frames 13-1/2 and 16-1/2 to support the bilge pump and fire/bilge pump respectively. Foundations shall be arranged and located to suit the pumps used, and shall be designed to accommodate portable aluminum covers over pumps (see drawings 529-201, 161-201 and 801-201).

186 Outfit and Furnishings Foundations

186.1 Headers and brackets shall be installed beneath keels and all other equipment to distribute loads to hull structure; as shown on the plans and as required by good marine practice.

186.2 Towing hitch lugs shall be securely welded in the side shell as indicated on the plans.

186.3 Foundations shall be provided for life jacket boxes as shown on drawing 161-201.

186.4 A foundation for the anchor winch shall be provided as shown on drawing 161-201.

190 SPECIAL PURPOSE SYSTEMS

192 Compartment Testing

After all welding is completed, all compartments shall be tested for leaks by applying 2 psi air pressure and checking all seams and boundaries with soap solution.

**GROUP 2** PROPULSION PLANT

200 PROPULSION PLANT, GENERAL

The Vessel is non-self-propelled.

**GROUP 3** ELECTRIC PLANT

300 ELECTRIC PLANT, GENERAL

304 Electric Cables

304.1 Electric cables shall be stranded, waterproof, impervious-sheathed, armored; approved by USCG, ABS or UL for marine installations. Cable routing shall be as depicted on the plans and/or in accordance with good practice. All penetrations of watertight decks and bulkheads shall be through approved stuffing tubes. Cables shall not be run in bilges or where subject to damage. All cable ties and straps shall be metallic.

304.2 Cables shall be run in continuous lengths between fixtures and/or junction boxes. All connections shall be made in junction boxes, on terminal strips or at fixtures or equipment using solderless crimp-type connectors of proper style and correct size for wire and terminal.

330 DECK LIGHTING

331 Lighting Distribution

Feeders for 120VAC deck lights shall be provided and installed on both sides of the ferry. The flexible section between pushboat and barge shall be Type SO or equal flexible cable.

332 Lighting Fixtures

Eight watertight fixtures, Pauluhn figure 707A-PG or approved equal, with polycarbonate globes shall be installed on the rails on each side of the ferry as shown on the drawings. (Total of 16 fixtures.) A 60 watt rough-service bulb shall be supplied in each fixture. Deck lights shall be controlled from the pushboat pilothouse.



**GROUP 4** COMMAND AND SURVEILLANCE

420 NAVIGATION SYSTEMS

422 Navigation Lights

422.1 The following 12VDC navigation lights (two of each are required), shall be provided and installed according to drawing 422-201:

Table 422.1 (a) RUNNING LIGHTS				
Name	Perko Fig. No.	Color	Arc Degrees	Location
Starboard	1127 GAO BLK	Green	112.5	Forward starboard and port aft kingposts
Port	1127 RAO BLK	Red	112.5	Forward port and starboard aft kingposts
Stern	1129 AOO BLK	White	135	Tops of starboard kingposts

422.2 Running lights shall be fed from the pushboat battery through a flexible power cord with watertight plug and receptacle. To accommodate the barge changing direction for each trip (bow becomes stern and port becomes starboard and vice versa), the combinations of lights shall be controlled by a switch in the pushboat pilothouse as shown on drawing 422-201.

**GROUP 5** AUXILIARY SYSTEMS

500 AUXILIARY SYSTEMS GENERAL

501 General Arrangement - Auxiliary Systems Drawings

Mechanical and piping systems shall be designed in accordance with good practice and installed in strict accordance with the approved drawings and USCG regulations; to the satisfaction of the USCG and the Owner.

502 Auxiliary Machinery

Auxiliary machinery shall be of high quality and of adequate size and rating for the particular application. Machinery and equipment shall be of rugged commercial or industrial quality. Like equipment shall be made by the same manufacturer and shall be of the same class, size or style insofar as possible. Equipment shall have replaceable parts or components, and the facility of making repairs in the field will be considered in evaluating equipment substitutions proposed by the Builder.

505 General Piping Requirements

Piping design and installation shall be in accordance with good practice and the approved drawings. Piping runs shall be neatly laid out, well supported and arranged to provide ready access to both the piping itself and any structure behind it. Piping materials shall be as listed in Table 505-1. Fittings shall be compatible with and appropriate for the specific systems. Valves shall be of rugged design and shall be rebuildable. Globe valves shall be used to regulate flow; gate, ball or butterfly valves shall be used for shut-off service. Flexible connections shall be provided at all moving equipment or wherever necessary to compensate for expansion. In general, Dresser couplings or unions shall be provided to facilitate takedown.

Table 505-1 PIPING SCHEDULE				
System	Lines	Fittings	Valves	Remarks
Bilge	Schedule 40 galvanized pipe, ASTM A53, threaded.	Schedule 40 malleable iron, galvanized, threaded.	Bronze, 150 lb. WOG; gate, globe or ball; threaded.	Test to 35 PSI.
Firemain	Schedule 40 galvanized pipe, ASTM A53, threaded.	Schedule 40 malleable iron, galvanized, threaded.	Bronze, 150 lb. WOG; gate, globe or ball; threaded.	Test to 90 PSI.
Air	Copper tubing, schedule 40 seamless black steel or synthetic	Schedule 40 malleable iron, black, threaded	Bronze 300 lb. WOG; gate, globe or ball; threaded	Test to 175 PSI
Vents	Schedule 40 black steel pipe, ASTM A53	Schedule 40 black steel, forged	N/A	

506 Vents

Two vents with inverted gooseneck terminals shall be provided for each hull void. Vents shall be 4 inch pipe. One vent shall be ducted to within 4 inches of the bottom of each compartment. All vent terminals shall be fitted with bellmouth terminals and bug screens.

520 SEA WATER SYSTEMS

526 Scuppers and Deck Drains

All areas of the deck shall be self-draining, with no water traps or pockets. Care shall be taken to eliminate all areas where water may freeze and create a slipping hazard.

## 529 Bilge and Firemain

529.1 The barge shall have a fixed bilge system as required by Subchapter T (46 CFR 182.500), which shall be installed as shown on drawing 529-201. Bilge suction branches to each compartment shall be 1-1/2 inch schedule 40 galvanized pipe run to a manifold located amidships on the port side of the barge. Each branch shall be fitted with a ball or globe angle valve and a non-return valve. Each compartment suction line shall terminate at a strainer in a corner of the compartment. All bilge lines shall be pitched to self-drain, with no pockets.

529.2 Two identical gasoline-engine powered fire/bilge pumps shall be provided and mounted on foundations; one at each end of the manifold. Pumps shall be completely self-contained and shall be connected to the manifold and to the discharge piping, in the case of the fire/bilge pump, with flexible hoses. Aluminum covers, held in place with stainless steel latches, shall be provided over each pump. Pumps shall be able to deliver at least 50 gallons per minute at a pressure of 60 PSI at the pump outlet. A pressure gauge shall be fitted at the discharge flange of both pumps.

529.3 A 2 inch suction line (described in paragraph 161) shall allow the fire pump to take suction from the river at the same time the bilge pump is working.

529.4 The fire/bilge pump shall be piped to discharge either overboard or to the firemain. Fire stations with hump-type rack, hydrant valve, 50 foot length of 1-1/2 inch lines fire hose meeting UL Standard 19 and a nozzle meeting 46 CFR paragraph 160.027 shall be provided at each end of the barge. Each fire hose rack shall be covered by an orange Herculite cover.

529.5 All aspects of the firemain and pumping system shall comply with 46 CFR Part 181, Subpart C.

## 550 AIR, GAS AND MISCELLANEOUS FLUID SYSTEMS

### 551 Compressed Air System

551.1 Compressed air control lines and pneumatic cylinders shall be installed to operate the vehicle tire barriers at each end of the barge. Control valves to operate the barrier cylinders shall be located at the port kingpost at each end of the barge. Compressed air supply shall be via flexible hose with quick-disconnect fittings, supplied from the compressed air system of the pushboat.

### 555 Fire Extinguishing Systems

Four type B-II portable fire extinguishers (15 lb. CO<sub>2</sub> or 10 lb. Dry Chemical Powder) shall provided by Builder in accordance with the plans and 46 CFR 181.500(a). Extinguishers and brackets shall be USCG approved, marine type, and shall be installed at corners of the vessel.

## 580 MECHANICAL HANDLING SYSTEMS

### 581 Mooring System

581.1 An anchor, winch and associated rigging to enable the ready anchoring of the barge under emergency conditions, and recovery of the anchor, shall be provided and installed as shown on drawing 161-201.

581.2 The anchor shall be a 150 pound Danforth-type with appropriate shackles and a rode of 1/2 inch diameter 6 x 37 IWRC galvanized wire rope.

581.3 The anchor shall be stored in a pipe tripod and recovered using a deck winch; all as shown on the plans. Operation of the system shall be demonstrated at trials.

### 582 Towing Systems

582.1 A pivoting hitch arm shall be fabricated and installed on the port side of the ferry, as shown on drawing 611-201. The hitch arm shall be constructed to allow independent movement of the dedicated pushboat and the ferry. The hitch arm shall also allow an "about-face" of the pushboat without disconnecting. To secure the pushboat alongside, latch hooks on the pushboat will engage angles welded to the port side of the barge.

### 583 Boats, Handling and Stowage Systems

Builder shall provide and stow in fiberglass deck boxes 150 adult life jackets and 75 children's life jackets. Life jackets shall be U. S. Coast Guard approved, Type I, and shall be marked with the vessel's name.

Three 24 inch diameter ring buoys, one with attached water light and 60 foot retrieving line shall be marked and stowed on brackets as shown on drawing 555-201 and in accordance with 46 CFR 180.70.

### 584 Mechanically Operated Door, Gate, Ramp, Turntable Systems

The ramps may be adjusted manually by means of Patterson Type D or equal 15-ton ratchet turnbuckles. All rigging shall be to the satisfaction of the Owner.

**GROUP 6** OUTFIT AND FURNISHINGS

600 OUTFIT AND FURNISHINGS, GENERAL

602 Hull Designating and Marking

Vessel's name in letters 8 inches high shall be cut from plate and welded to the hull port and starboard all in accordance with documentation requirements of the U. S. Coast Guard. The Vessel's official number shall be center punched or outlined in weld bead and painted on the hull.

603 Draft Marks

Navigational draft numbers shall be cut from plate, welded on and painted. Numbers shall be located port and starboard, forward and aft, near bulkheads 4 and 26.

604 Tags

604.1 All necessary labeling, stenciling and marking as required by Coast Guard regulations shall be made on separate plaques, boards or labels, screwed to structure.

604.2 All life jackets and ring buoys shall be marked with the vessel's name and port.

604.3 Storage boxes for life jackets shall be marked to show number and size contained in the box.

610 SHIP FITTINGS

611 Hull Fittings

611.1 Two Nabrico DF-482 or equal 24 inch cast steel cast steel keels shall be provided and welded to the starboard corners of the barge.

611.2 Two single bits, fabricated from extra-heavy pipe, shall be fitted at the port corners of the barge (hitch side) for use in case of failure of the pneumatic latch hooks.

612 Rails, Stanchions and Lifelines

612.1 Fixed rails shall be provided and installed on each side of the vessel as shown on the drawings.

612.2 A curb shall be provided and installed on each side of the vessel all as shown on the plans.

612.3 Gates shall be provided in side rails to permit crew to readily and safely cross between barge and pushboat.

620 HULL COMPARTMENTATION

623 Ladders

Vertical ladders or climbing rungs shall be provided under all manholes.

630 PRESERVATIVES AND COVERINGS

631 Painting and Surface Preparation

631.1 Vessel shall be painted with protective coatings applied over surface preparations as listed in Table 631-1, Paint Schedule. This Paint Schedule is given as a guide to the level of quality required. Builders are encouraged to quote on their standard systems. Color scheme shall be as selected by Owner, and all painting shall be subject to approval by Owner or his representative.

631.2 Paint application shall strictly follow the manufacturer's instructions, with special attention to recoating times, temperature and humidity conditions.

631.3 All painting on both the interior and exterior surfaces of the hull shall be completed, including curing, before the vessel is launched. Prior to launching the vessel, painted hull interior and exterior surfaces shall be thoroughly inspected. Notice shall be given to the COR 7 days in advance of the scheduled launching for this purpose. The vessel shall not be launched until the painting has been approved.

631.4 Prior to delivery, all interior and exterior painting shall be thoroughly inspected. Any defects in the coating system shall be repaired by the Contractor to restore the integrity of the paint. Any additional painting required as a result of this final inspection process shall be done to the satisfaction of the COR at no additional cost to the Owner.

631.5 The Contractor is responsible for delivering the vessel with all painted surfaces in good condition, and for obtaining THE PAINT WARRANTY DECLARATION from the paint manufacturer.

631.6 The Contractor shall provide a Paint Warranty Declaration document written and signed by the paint manufacturer representative, clearly stating that the surface preparation, environmental conditions, coating application procedure and thickness for each area meets the manufacturer's requirements for the paint system used, and that under normal service conditions, the coating system will maintain its integrity for a period of five (5) years.

**TABLE 631-1  
 PAINT SCHEDULE**

SPACE OR AREA	PREPARATION	COAT S	DESCRIPTION	COLOR	WFT	DFT	RECOAT @ 70 DEGREES F.
Underwater Hull Keel to Sheer	Near white metal blast SSPC-SP10	1	Amercoat 385 universal epoxy	Oxide Red	7.5	5.0	8 hours
		1		Black	7.5	5.0	8 hours
		4	Amercoat 385				—
Main Deck Ramps	Commercial blast SSPC-SP6	1	Amercoat 385	Oxide Red	7.5	5.0	8 hours
		1	Amercoat 385ASA non-skid	Pearl Gray	12.0	8.0	12 hours
Voids	Power tool cleaning SSPC-SP3	1	Amercoat 5405	White	9.0	6.0	10 hours
Hand Rails Ladder	Commercial blast SSPC-SP6	1	Amercoat 385	Oxide Red	7.5	5.0	8 hours
		1	Amercoat 450HS aliphatic polyurethane	White	3.0	2.0	4 hours
Kingpost	Commercial blast SSPC-SP6	1	Amercoat 385	Oxide Red	7.5	5.0	8 hours
		1	Amercoat 450 HS	Owner's Choice	3.0	2.0	4 hours
Deck Fittings	Commercial blast SSPC-SP6	1	Amercoat 385	Oxide Red	7.5	5.0	8 hours
		1	Amercoat 450 HS	Owner's Choice	3.0	2.0	4 hours
Numbers Detail Work	Solvent cleaning SSPC-SP1	1	Amercoat 450HS	Owner's Choice	3.0	2.0	4 hours

634 Deck Covering

All deck surfaces shall be non-skid painted.

**PART III – BASIS OF PAYMENT**

This work will be paid for at the contract unit price per each for FERRY BARGE and PUSHBOAT.

The Department has contracted services with an engineering consultant firm, Owner's Representative, for ten (10) to fifteen (15) on site inspections of the Ferry barge and Pushboat construction and testing:

Consultant to be determined at a later date.

After each on site inspection, the Owner's Representative will submit a progress estimate to the Department for these pay items which will be used for pay estimates. The Contractor will only receive payment for these pay items based on the progress estimates from the Owner's Representative. Prior to acceptance of each vessel by the Owner, a maximum of 85% of each pay item will be paid. Upon acceptance of each vessel, an additional 10% of each pay item will be paid. The final 5% will be paid upon completion of the one (1) year builder's warranty period.

**FERRY BARGE AND PUSHBOAT DELIVERY**

The Ferry shall be delivered to the owner at the Kampsville ferry site on the Illinois River. Alternate delivery and acceptance options can be negotiated with IDOT depending on location of construction facility. The Ferry shall be delivered ready for service, with all compartments thoroughly cleaned, all debris and Contractor's equipment removed, all machinery in operating condition, with operation fluids in the propulsion and auxiliary machinery systems filled to the proper operating level.

At or before the time of delivery, the Contractor shall supply the Owner with all documents, drawings, manuals, spare parts as required by the contract. Spare parts shall be procured for the following major equipment, main engines, steering system HPU and controls, and generator based on manufacturer recommendations.

This work will be paid for at the contract unit price per each for FERRY BARGE DELIVERY and PUSHBOAT DELIVERY.



## **SURPLUS BARGE AND PUSHBOAT**

### 1. General

Existing ferry barge and pushboats identified in this part of the specification are inactive and no longer in service. They have been surplused by IDOT. Requirements of the Contractor regarding disposition of these vessels are set forth below.

NOTE: The Contractor MUST take possession of these vessels. Bidders who qualify their bid to exclude taking possession of these vessels will be considered NON-RESPONSIVE.

### 2. Description and Condition of Vessels

#### 2.1 Kampsville II

Length	47.7 feet
Breadth	11.5 feet
Depth	4.2 feet
Main engines	2 x Detroit Diesel 4-71
Generator	Deutz Diesel, 8KW, 120./240 Volt (serial number 10636948)

Kampsville II is afloat at the Kampsville, IL ferry landing. All diesel engines are in running condition.

There is no Certificate of Inspection for Kampsville II.

IDOT is unaware of any hazardous materials on board Kampsville II.

#### 2.2 Kraigel

Length	40.5 feet
Breadth	3.0 feet
Depth	10.0 feet
Main engine	1 x Detroit Diesel 6-71
Generator	Onan, 12KW, 50 Amps (serial number 0374780623)

Kraigel is afloat at the Kampsville, IL ferry landing.

There is no Certificate of Inspection for Kraigel.

IDOT is unaware of any hazardous materials on board Kraigel.

### 2.3 Barge 11

Length	85.0 feet
Breadth	30.0 feet
Depth	3.6 feet

Barge 11 is afloat at the Kampsville, IL ferry landing. Barge 11 holds a current USCG Certificate of Inspection.

Barge 11 has coatings containing lead.

### 3. Pre-Bid Survey

Prospective bidders may visit and/or survey any, or all, of these vessels during the bidding period Monday through Friday during the hours of 8:00 am to 3:00 pm. Arrangements for the visit and/or survey can be made with:

Rick Watters  
Ferry Supervisor  
Illinois Department of Transportation  
Kampsville Ferry  
P O Box 182  
Kampsville, IL 62053  
Phone: (618)653-4518

### 4. Disposition Requirements

The Contractor must take possession of each vessel in its found material condition (“as is”) at its mooring (“where is”) at the Kampsville, IL ferry landing. Upon taking possession the Contractor must remove the vessel from its mooring using Contractor-furnished equipment. All fees, labor cost, and other costs associated with removal of the vessels shall be at the Contractor’s expense.

At the time of taking possession of the vessel IDOT will transfer ownership to the Contractor. All costs associated with transfer of ownership shall be at the Contractor’s expense.

After transfer of ownership and taking possession of the vessel, the vessel becomes the Contractor’s property.

### 5. Schedule

The Contractor must take possession of Kampsville II, Kraigel, and Barge 11 no earlier than final acceptance of the new Pushboat and Ferry barge and no later than 30 calendar days after final acceptance of the new Pushboat and Ferry barge.

### 6. Basis of Payment

This work will be paid for at the contract unit price per each for SURPLUS BARGE and SURPLUS PUSHBOAT.

## **ON SITE INSPECTIONS**

The Department has contracted services with an engineering consultant firm, Owner's Representative, for on site inspections of the Ferry barge and Pushboat construction and testing.

The Contractor, all subcontractors, fabricators and/or other entity associated with this contract shall allow unrestricted access to personnel from the Department and/or Owner's Representative on site to inspect and monitor the construction and testing of the Ferry barge, Pushboat, and appurtenances.

## **MONTHLY LABOR SUMMARY AND ACTIVITY REPORTING SYSTEM**

Effective: 1-1-1995

Revised June 2001

### **I. Monthly Labor Summary Report, Form SBE 148**

The prime contractor and each first and second tier sub-contractor, (hereinafter referred to as "subcontractor") shall submit a certified Monthly Labor Summary Report directly to the District Engineer.

This report is in lieu of submittal of the Monthly Workforce Analysis Report, Form SBE 956.

This report must be received in District Eight no later than the tenth day of the next month.

This Report shall be submitted by the prime contractor and each subcontractor, for each consecutive month, from the start, to the completion of their work on the contract.

The data source for this Report will be a summation of all personnel and hours worked on each subject contract for the month based on weekly payrolls for that month.

The Monthly Labor Summary Report is required to be submitted in one of the following formats:

- a.) For contractors having IDOT contracts valued in the aggregate at \$250,000 or less, the report may be typed or clearly handwritten using Form SBE 148 for submittal to the District Engineer for District Eight.
- b.) For contractors having IDOT contracts valued in the aggregate at more than \$250,000, the report must be submitted in a specific "Fixed Length Comma Delimited ASCII Text File Format". The subject file format is detailed on the next page. Submittal of this file may be by 3.5 inch disk, modem, or by e-mail.

### **II. Monthly Contract Activity Report, Form SBE 248**

The prime contractor and each subcontractor shall submit a monthly report directly to the District Engineer reflecting their contract activity on all Illinois Department of Transportation contracts they have in force in District Eight.



II.) Monthly Contract Activity Report, Form SBE 248

The following activity codes are to be used to identify the contractor's contract status each month on the Monthly Activity Report, Form SBE 248:

- A. Contract Status:      1 - Not Started      2 - Active      3 - No Work  
                                 4 - Suspended      5 - Complete

Failure to comply with this special provision may result in the withholding of payments to the contractor, and/or cancellation, termination, or suspension of the contract in whole or part.

Compliance with this Special Provision shall be considered incidental to the cost of the contract and no additional compensation will be allowed for any costs incurred.

All prime and subcontractors having contracts in the aggregate exceeding \$250,000 must provide a "Fixed Length Comma Delimited ASCII File" for approval prior to the start of construction.

This Special Provision must be included in each subcontract agreement.

The Department of Transportation is requesting disclosure of information necessary to accomplish the statutory purpose as outlined under 23CFR part 230 and 41CFR part 60.4 and the Illinois Human Rights Act. Disclosure of this information is REQUIRED. Failure to comply with this special provision may result in the withholding of payments to the contractor, and/or cancellation, termination, or suspension of the contract in whole or part.

Compliance with this Special Provision shall be considered incidental to the cost of the contract and no additional compensation will be allowed for any costs incurred.

This Special Provision must be included in each subcontract agreement.

**NAMES**

The name of the pushboat will be Columbiana and the name of the ferry barge will be Barge 2013. These names shall be placed on the appropriate vessel in compliance with maritime regulations.

This work shall not be paid for separately but shall be included in the cost of PUSHBOAT and FERRY BARGE.

**PLAN CHANGES**

The Contractor is directed to the various title blocks in the contract plans. The project information shall be changed as follows:

- Kampsville shall now refer to Kampsville
- Any route designation shall now refer to FAP Route 761
- Any section designation shall now refer to Section 101-I-2
- Any county designation shall now refer to Calhoun/Greene Counties
- Any contract designation shall now refer to Contract No. 76G16

**SPARE PARTS PUSHBOAT**

The Contractor shall provide the following pushboat spare parts at the time of delivery. The type and size of all spare parts shall be as shown or detailed in the contract plans, special provision, and specifications.

POWER TRAIN PARTS	# NEEDED
Propeller Shaft	1 Each
Right Hand turning Stainless Steel 4 Blade Propeller	1 Each
Left Hand turning Stainless Steel 4 Blade Propeller	1 Each
Spare Transmissions	2 Each
ENGINE PARTS	# NEEDED
TDI Air Starter T-306060211-001	2 Each
STEERING PARTS	# NEEDED
Main Rudder Complete	1 Each
Flanking Rudder Complete	1 Each
Hydraulic Rudder Steering Cylinders	2 Steering 2 Flanking
MISCELLANEOUS PARTS	# NEEDED
All Filters Required	1 Case (min. of 12) Each Type
All Hoses Required	1 Complete Set

The spare parts shall not be paid for separately, but shall be included in the cost of the PUSHBOAT pay item.

**SPARE PARTS BARGE FERRY**

The Contractor shall provide the following barge spare parts at the time of delivery. The type and size of all spare parts shall be as shown or detailed in the contract plans, special provision, and specifications.

MISCELLANEOUS PARTS	# NEEDED
All Filters Required	1 Case (min. of 12) Each Type
All Hoses Required	1 Complete Set
Spare air cylinders for Barrier Each end	4 Each
Spare latch Hooks	1 Each
Spare Latch Cylinders	1 Each
Spare throttle control boxes, if shift controls are cable and not electronic.	2 Each

The spare parts shall not be paid for separately, but shall be included in the cost of the BARGE FERRY pay item.

**STATUS OF UTILITIES TO BE ADJUSTED**

**NO UTILITIES TO BE ADJUSTED**

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Sections 102, 103, and Articles 105.07 and 107.20 of the Standard Specifications for Road and Bridge Construction shall apply.

If any utility adjustment or removal has not been completed when required by the Contractor's operation, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

1. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. (1-800-892-0123 OR 811) OR FOR NON-MEMBERS THE UTILITY COMPANY DIRECTLY.
2. UTILITY INTERFERENCES ARE NOT ANTICIPATED ON THIS CONTRACT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS CONSTRUCTION ACTIVITIES WITH THE VARIOUS UTILITY OWNERS. ALL POTENTIAL CONFLICTS SHALL BE INVESTIGATED AND REMEDIAL ACTION TAKEN PRIOR TO INTERRUPTION OF THE CONTRACTOR'S PROGRESS. NO ADDITIONAL COST SHALL BE ADDED TO THE CONTRACT RESULTING FROM UTILITY CONFLICTS.

### **COMPLETION DATE (VIA CALENDAR DAYS) (BDE)**

Effective: April 1, 2008

The Contractor shall complete all work on or before the completion date of this contract which will be based upon **360** calendar days.

The completion date will be determined by adding the specified number of calendar days to the date the Contractor begins work, or to the date ten days after execution of the contract, whichever is the earlier, unless a delayed start is granted by the Engineer.

### **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: August 2, 2011

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.



OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 0.00% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents that enough DBE participation has been obtained to meet the goal: or
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's website at [www.dot.il.gov](http://www.dot.il.gov).

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement. The failure of the bidder to comply will render the bid not responsive.

- (a) The bidder shall submit a Disadvantaged Business Utilization Plan on Department forms SBE 2025 and 2026 with the bid.
- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:
- (1) The names and addresses of DBE firms that will participate in the contract;
  - (2) A description, including pay item numbers, of the work each DBE will perform;
  - (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
  - (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
  - (5) if the bidder is a joint venture comprised of DBE companies and non-DBE companies, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
  - (6) If the contract goal is not met, evidence of good faith efforts.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work performance to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
  - (4)
    - a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
    - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.
  - (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
  - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
  - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

- (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217)785-4611. Telefax number (217)785-1524.
- (b) TERMINATION OR REPLACEMENT. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in the Special Provision.
- (c) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
- (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
- (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;

- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.
- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal.

- (f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the BDE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.



- (g) **ENFORCEMENT.** The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.
- (h) **RECONSIDERATION.** Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department.

**LIQUIDATED DAMAGES (BDE)**

Effective: April 1, 2013

Revise the table in Article 108.09 of the Standard Specifications to read:

"Schedule of Deductions for Each Day of Overrun in Contract Time"			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Work Day
\$ 0	\$ 100,000	\$ 475	\$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	6,775	9,525"

## **PAYMENTS TO SUBCONTRACTORS (BDE)**

Effective: June 1, 2000

Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

## **SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: April 2, 2005

Revised: April 1, 2011

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting according to Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

The mobilization payment to the subcontractor is an advance payment of the reported amount of the subcontract and is not a payment in addition to the amount of the subcontract; therefore, the amount of the advance payment will be deducted from future progress payments.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

## **TRAINING SPECIAL PROVISIONS (BDE)**

Effective: October 15, 1975

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be **2**. In the event the Contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The Contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the Contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the Contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The Contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used, the Contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the Contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the Contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A Contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The Contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The Contractor shall provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

Method of Measurement. The unit of measurement is in hours.

Basis of Payment. This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price, and total price have been included in the schedule of prices.

**IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION  
(TPG)**

Effective: August 1, 2012

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT's community college pre-apprenticeship programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs based at Illinois Community Colleges throughout Illinois, by Intergovernmental Agreement with the Illinois Community College Board, to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on-the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which state funded construction contracts shall include "Training Program Graduate (TPG) Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate (TPG) Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of the IDOT funded Pre-apprenticeship Training Program to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at \$10.00 per hour for training given a certified graduate trainee on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under the Illinois Prevailing Wage Act and is not eligible for other training fund reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under the Contract and the number of hours for which the incentive payment provided under this Special Provision will be or has been claimed for the TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this Special Provision.

**METHOD OF MEASUREMENT:** The unit of measurement is in hours.

**BASIS OF PAYMENT:** This work will be paid for at the contract unit price of \$10.00 per hour for TRAINEES TRAINING PROGRAM GRADUATE. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

The Contractor shall provide training opportunities aimed at developing full journeyworker in the type of trade or job classification involved. The initial number of TPGs for which the incentive is available under this contract is **2**. During the course of performance of the Contract the Contractor may seek approval from the Department for additional incentive eligible TPGs. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the TPGs are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this Special Provision. The Contractor shall also insure that this Training Program Graduate Special Provision is made applicable to such subcontract if the TPGs are to be trained by a subcontractor and that the incentive payment is passed on to each subcontractor.

For the Contractor to meet the obligations for participation in this TPG incentive program under this Special Provision, the Department has contracted by Intergovernmental Agreement with the Illinois Community College Board to provide screening, tutoring and pre-training to individuals interested in working in the applicable construction classification and has certified those students who have successfully completed the program and are eligible to be TPGs. A designated IDOT staff member, the Director of the Office of Business and Workforce Diversity (OBWD), will be responsible for providing assistance and referrals to the Contractor for the applicable TPGs. For this contract, the Director of OBWD is designated as the responsible IDOT staff member to provide the assistance and referral services related to the placement for this Special Provision. For purposes of this Contract, contacting the Director of OBWD and interviewing each candidate he/she recommends constitutes reasonable recruitment.

Prior to commencing construction, the Contractor shall submit to the Department for approval the TPGs to be trained in each selected classification. Furthermore, the Contractor shall specify the starting time for training in each of the classifications. No employee shall be employed as a TPG in any classification in which he/she has successfully completed a training course leading to journeyman status or in which he/she has been employed as a journeyman. Notwithstanding the on-the-job training purpose of this TPG Special Provision, some offsite training is permissible as long as the offsite training is an integral part of the work of the contract and does not comprise a significant part of the overall training.

Training and upgrading of TPGs of IDOT pre-apprentice training programs is intended to move said TPGs toward journeyman status and is the primary objective of this Training Program Graduate Special Provision. Accordingly, the Contractor shall make every effort to enroll TPGs by recruitment through the IDOT Illinois Community College Program to the extent such persons are available within a reasonable area of recruitment. The Contractor will be responsible for demonstrating the steps that it has taken in pursuance thereof, prior to a determination as to whether the Contractor is in compliance and entitled to the Training Program Graduate TPG Special Provision \$10.00 an hour incentive.

The Contractor or subcontractor shall provide each TPG with a certification showing the type and length of training satisfactorily completed.

## UTILITY COORDINATION AND CONFLICTS (BDE)

Effective: April 1, 2011

Revised: January 1, 2012

Revise Article 105.07 of the Standard Specifications to read:

**“105.07 Cooperation with Utilities.** The Department reserves the right at any time to allow work by utilities on or near the work covered by the contract. The Contractor shall conduct his/her work so as not to interfere with or hinder the progress or completion of the work being performed by utilities. The Contractor shall also arrange the work and shall place and dispose of the materials being used so as not to interfere with the operations of utility work in the area.

The Contractor shall cooperate with the owners of utilities in their removal and rearrangement operations so work may progress in a reasonable manner, duplication or rearrangement of work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted.

The Contractor shall coordinate with any planned utility adjustment or new installation and the Contractor shall take all precautions to prevent disturbance or damage to utility facilities. Any failure on the part of the utility owner, or their representative, to proceed with any planned utility adjustment or new installation shall be reported promptly by the Contractor to the Engineer.”

Revise the first sentence of the last paragraph of Article 107.19 of the Standard Specifications to read:

“When the Contractor encounters unexpected regulated substances due to the presence of utilities in unanticipated locations, the provisions of Article 107.40 shall apply; otherwise, if the Engineer does not direct a resumption of operations, the provisions of Article 108.07 shall apply.”

Revise Article 107.31 of the Standard Specification to read:

**“107.31 Reserved.”**

Add the following four Articles to Section 107 of the Standard Specifications:

**“107.37 Locations of Utilities within the Project Limits.** All known utilities existing within the limits of construction are either indicated on the plans or visible above ground. For the purpose of this Article, the limits of proposed construction are defined as follows:

(a) Limits of Proposed Construction for Utilities Paralleling the Roadway.

(1) The horizontal limits shall be a vertical plane, outside of, parallel to, and 2 ft (600 mm) distant at right angles from the plan or revised slope limits.



In cases where the limits of excavation for structures are not shown on the plans, the horizontal limits shall be a vertical plane 4 ft (1.2 m) outside the edges of structure footings or the structure where no footings are required.

- (2) The upper vertical limits shall be the regulations governing the roadbed clearance for the specific utility involved.
  - (3) The lower vertical limits shall be either the top of the utility at the depth below the proposed grade as prescribed by the governing agency or the limits of excavation, whichever is less.
- (b) Limits of Proposed Construction for Utilities Crossing the Roadway in a Generally Transverse Direction.
- (1) Utilities crossing excavations for structures that are normally made by trenching such as sewers, underdrains, etc. and all minor structures such as manholes, inlets, foundations for signs, foundations for traffic signals, etc., the limits shall be the space to be occupied by the proposed permanent construction, unless otherwise required by the regulations governing the specific utility involved.
  - (2) For utilities crossing the proposed site of major structures such as bridges, sign trusses, etc., the limits shall be as defined above for utilities extending in the same general direction as the roadway.

It is understood and agreed that the Contractor has considered in the bid all of the permanent and temporary utilities in their present and/or adjusted positions as indicated in the contract. It is further understood the actual location of the utilities may be located anywhere within the tolerances provided in 220 ILCS 50/2.8 or Administrative Code Title 92 Part 530.40(c), and the proximity of some utilities to construction may require extraordinary measures by the Contractor to protect those utilities.

No additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of or any claimed interference from known utility facilities or any adjustment of them, except as specifically provided in the contract.

**107.38 Adjustments of Utilities within the Project Limits.** The adjustment of utilities consists of the relocation, removal, replacement, rearrangements, reconstruction, improvement, disconnection, connection, shifting, new installation, or altering of an existing utility facility in any manner.

Utilities which are to be adjusted shall be adjusted by the utility owner or the owner's representative or by the Contractor as a contract item. Generally, arrangements for adjusting known utilities will be made by the Department prior to project construction; however, utilities will not necessarily be adjusted in advance of project construction and, in some cases, utilities will not be removed from the proposed construction limits as described in Article 107.37. When utility adjustments must be performed in conjunction with construction, the utility adjustment work will be indicated in the contract.

The Contractor may make arrangements for adjustment of utilities indicated in the contract, but not scheduled by the Department for adjustment, provided the Contractor furnishes the Department with a signed agreement with the utility owner covering the adjustments to be made. The cost of any such adjustments shall be the responsibility of the Contractor.

**107.39 Contractor’s Responsibility for Locating and Protecting Utility Property and Services.** At points where the Contractor’s operations are adjacent to properties or facilities of utility companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

Within the State of Illinois, a State-Wide One Call Notice System has been established for notifying utilities. Outside the city limits of the City of Chicago, the system is known as the Joint Utility Locating Information for Excavators (JULIE) System. Within the city limits of the City of Chicago the system is known as DIGGER. All utility companies and municipalities which have buried utility facilities in the State of Illinois are a part of this system.

The Contractor shall call JULIE (800-892-0123) or DIGGER (312-744-7000), a minimum of 48 hours in advance of work being done in the area, and they will notify all member utility companies involved their respective utility should be located.

For utilities which are not members of JULIE or DIGGER, the Contractor shall contact the owners directly. The plan general notes will indicate which utilities are not members of JULIE or DIGGER.

The following table indicates the color of markings required of the State-Wide One Call Notification System.

Utility Service	Color
Electric Power, Distribution and Transmission	Safety Red
Municipal Electric Systems	Safety Red
Gas Distribution and Transmission	High Visibility Safety Yellow
Oil Distribution and Transmission	High Visibility Safety Yellow
Telephone and Telegraph System	Safety Alert Orange
Community Antenna Television Systems	Safety Alert Orange
Water Systems	Safety Precaution Blue
Sewer Systems	Safety Green
Non-Potable Water and Slurry Lines	Safety Purple
Temporary Survey	Safety Pink
Proposed Excavation	Safety White (Black when snow is on the ground)

The State-Wide One Call Notification System will provide for horizontal locations of utilities. When it is determined that the vertical location of the utility is necessary to facilitate construction, the Engineer may make the request for location from the utility after receipt of notice from the Contractor. If the utility owner does not field locate their facilities to the satisfaction of the Engineer, the Engineer will authorize the Contractor in writing to proceed to locate the facilities in the most economical and reasonable manner, subject to the approval of the Engineer, and be paid according to Article 109.04.

The Contractor shall be responsible for maintaining the excavations or markers provided by the utility owners.

The Contractor shall take all necessary precautions for the protection of the utility facilities. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the utility company will be immediately notified. The utility company will make arrangements to restore such facility to a condition equal to that existing before any such damage or destruction was done.

In the event of interruption of utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with the said authority in the restoration of service. If water service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

**107.40 Conflicts with Utilities.** Except as provided hereinafter, the discovery of a utility in an unanticipated location will be evaluated according to Article 104.03. It is understood and agreed that the Contractor has considered in the bid all facilities not meeting the definition of a utility in an unanticipated location and no additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of or any claimed interference from such facilities.

When the Contractor discovers a utility in an unanticipated location, the Contractor shall not interfere with said utility, shall take proper precautions to prevent damage or interruption of the utility, and shall promptly notify the Engineer of the nature and location of said utility.

(a) Definition. A utility in an unanticipated location is defined as an active or inactive utility, which is either:

(1) Located underground and (a) not shown in any way in any location on the contract documents; (b) not identified in writing by the Department to the Contractor prior to the letting; or (c) not located relative to the location shown in the contract within the tolerances provided in 220 ILCS 50/2.8 or Administrative Code Title 92 Part 530.40(c); or

(2) Located above ground or underground and not relocated as provided in the contract.

Service connections shall not be considered to be utilities in unanticipated locations.

(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work applicable to the utility or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows:

- (1) Minor Delay. A minor delay occurs when the Contractor's operation is completely stopped by a utility in an unanticipated location for more than two hours, but not to exceed three weeks.
- (2) Major Delay. A major delay occurs when the Contractor's operation is completely stopped by a utility in an unanticipated location for more than three weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the contractor's rate of production decreases by more than 25 percent and lasts longer than seven days.

(c) Payment. Payment for Minor, Major and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to three weeks plus the cost of move-out to either the Contractor's yard or another job, whichever is less. Rental equipment may be paid for longer than three weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Whether covered by (1), (2) or (3) above, additional traffic control required as a result of the operation(s) delayed will be paid for according to Article 109.04 for the total length of the delay.

If the delay is clearly shown to have caused work, which would have otherwise been completed, to be done after material or labor costs have increased, such increases may be paid. Payment for materials will be limited to increased cost substantiated by documentation furnished by the Contractor. Payment for increased labor rates will include those items in Article 109.04(b)(1) and (2), except the 35 percent and ten percent additives will not be permitted. On a working day contract, a delay occurring between November 30 and May 1, when work has not started, will not be considered as eligible for payment of measured labor and material costs.

Project overhead (not including interest) will be allowed when all progress on the contract has been delayed, and will be calculated as 15 percent of the delay claim.

- (d) Other Obligations of Contractor. Upon payment of a claim under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this Provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this Provision."

## **WORKING DAYS (BDE)**

Effective: January 1, 2002

The Contractor shall complete the work within **360** calendar working days.